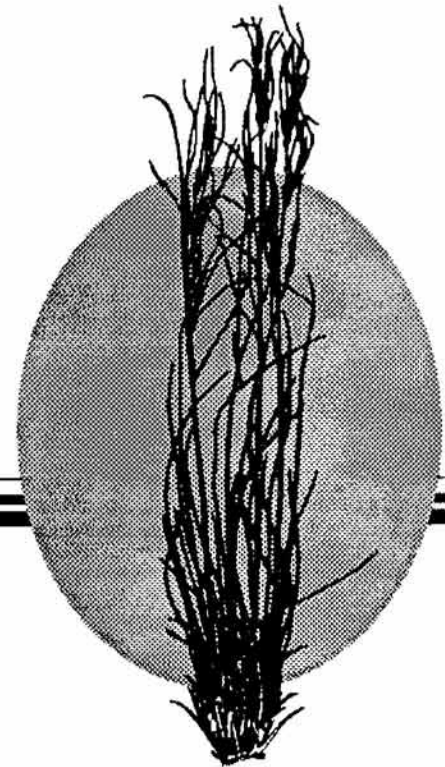


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Chapter

# 4

## Consultation and Coordination



# CHAPTER 4

## CONSULTATION AND COORDINATION

### PUBLIC INVOLVEMENT

Public involvement and interagency/intergovernmental coordination and consultation are recognized as an essential element in the development of an environmental impact statement (EIS). Public involvement is a critical element for achieving a successful program for the management of public lands and natural resources.

Agencies and interest groups with special expertise or interest in vegetation management were notified of the project and advised of the need to coordinate information. Technical and scientific information available from a variety of sources was reviewed and considered during the scoping process.

Individuals with a specific interest in vegetative treatment may become further involved at the Resource Area level with the Resource Management Plans which will identify general areas of proposed land treatments. Further involvement may occur at the timesite specific environmental analysis and documentation are made by making a written request to the local BLM office for those types of actions a group or an individual may be interested in.

### SUMMARY

Under the National Environmental Policy Act, Federal agencies are required to seek public participation in the environmental analysis process. Once the decision was made to develop a vegetation treatment environmental impact statement, steps were taken to promptly notify the public of the intent to complete an environmental impact statement and encourage the public to participate in the process. This step is called "scoping." The purpose of scoping is to determine, with input from the public and other agencies (federal and state), including BLM staff, the significant issues relating to the proposed actions to be analyzed in the EIS. Issues not previously identified before the scoping were added to the previously identified issues. In addition, some issues identified were altered or deleted as a result of scoping.

When a project is a multi-State project, the Washington office usually designates the lead State Di-

rector. Wyoming's State Director was given the responsibility to lead the project. The next step in the process was to form an interdisciplinary team representing the 13 Western States to be included in the project. The interdisciplinary team members represented the following States: Arizona, Colorado, Idaho, Montana, North Dakota, South Dakota, Nevada, New Mexico, Oklahoma, Oregon, Washington, Utah, and Wyoming.

In addition to serving as technical experts and State contacts for the project, team members played a critical role in the public participation process. Team members assisted in developing techniques and in conducting public meetings to facilitate public participation in the scoping process. They also functioned as liaisons between the team and their individual State Directors and helped to identify the most suitable technique for securing public participation in their individual States.

The team members, together with their individual State Directors, Public Affairs Office, and Planning Division, developed their own method for seeking public participation. Where public response warranted, States conducted public meetings, but all States involved issued press releases informing the public of the intent, purpose, and potential issues involved in the Vegetation Treatment Environmental Impact Statement, and invited public participation.

Members of the public, as well as other agencies or organizations known to be interested in or affected by the proposed action, were identified by the team members with the help of the Office of Public Affairs and the Planning Division from each State involved in the project. Those identified were informed of the public meetings in those states where public meetings were conducted. To help facilitate the discussion during the meetings, fact sheets were provided, and in Wyoming, a video tape was prepared that depicted the different methods of vegetation treatment currently being utilized by the Bureau of Land Management.

The BLM State Directors in the States of Arizona, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, Nevada, and Wyoming represented management responsibility for all the States within the study area. Each State Director had the responsibility of determining the need for public meetings within their respective area of jurisdiction.

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### PUBLIC PARTICIPATION

On July 15, 1988 the BLM published in the Federal Register a notice of intent to prepare the draft environmental impact statement and conduct public scoping. The public was invited to submit issues, concerns, and alternative treatment suggestions during the 30-day comment period. During the scoping period the BLM conducted thirteen public scoping meetings in the EIS area to provide an opportunity for the public to provide any of their issues and to further inform and discuss the process undertaken with BLM officials.

Scoping meetings were held at the following locations:

Arizona Strip District Office  
225 North Bluff St.  
St. George, Utah 84770

Safford District Office  
425 East 4th St.  
Safford, Arizona 85546

Phoenix District Office  
2015 West Deer Valley Rd.  
Phoenix, Arizona 85207

Yuma District Office  
3150 Winsor Ave.  
Yuma, Arizona 85364

Boise District Office  
3948 Development Ave.  
Boise, Idaho 83705

Agricultural Auditorium  
New Mexico State University Campus  
Las Cruces, New Mexico 88005

Roswell, Public Library  
Roswell, New Mexico 88201

Albuquerque District Office  
435 Montano Rd. NE  
Albuquerque, New Mexico 87107

Sagebrush Inn  
Highway 63  
Taos, New Mexico 87571

Farmington Resource Area Office  
1235 La Plata Highway  
Farmington, New Mexico 87401

Riverhouse Motor Inn  
Bend, Oregon 97701

Utah State Office  
324 South State Street  
Salt Lake City, Utah 84111

Casper District Office  
1701 East "E" St.  
Casper, Wyoming 82601

The BLM received 34 scoping letters, and comments were utilized in the design of the EIS and alternatives considered prior to development of the Draft EIS.

The draft EIS (DEIS) was made available to the public on March 1, 1990, and notices of availability were published in the Federal Register. The BLM provided a 75-day comment period which ended May 15, 1990. However, the comment period was extended until May 22, 1990 to accommodate comments received as a result of a public hearing requested by respondents in the State of Utah. A notice extending the comment period was filed in the Federal Register as well. During the comment period there were fifteen public meetings and one public hearing held. At least one public meeting was held for each state in the study area.

These meetings were held at the following locations:

#### Public Hearing

Salt Lake County Commission Chambers  
2001 South State St.  
Salt Lake City, Utah

#### Public Meetings

Phoenix District Office  
2015 West Deer Valley Rd.  
Phoenix, Arizona

Anasazi Heritage Center  
27501 Hwy. 184  
Dolores, Colorado

Grand Junction District Office  
764 Horizon Dr.  
Grand Junction, Colorado

Colorado State Office  
2850 Youngfield St.  
Lakewood, Colorado

Boise District Office  
3948 Development Ave.  
Boise, Idaho

Miles City District Office  
West of Miles City  
PO Box 940  
Miles City, Montana

Lee Metcalf Bldg.  
1520 E. 6th. St.  
Helena, Montana

Garnet Resource Area  
3255 Ft. Missoula Rd.  
Missoula, Montana

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### Public Meetings (Continued)

Holiday Inn  
1000 E. Sixth St.  
Reno, Nevada

Las Cruces District Office  
1800 Marquess St.  
Las Cruces, New Mexico

The Riverhouse  
State Hwy. 97  
Bend, Oregon

Washington County Administration Bldg.  
197 East Tabernacle  
St. George, Utah

Utah State Office  
324 South State St.  
Salt Lake City, Utah

Western Wyoming College  
Room 1302  
Rock Springs, Wyoming

Worland District Office  
101 South 23rd St.  
Worland, Wyoming

In addition, in an effort to help the public better understand the draft EIS, its alternatives, and treatment methods, the BLM produced a video tape which was shown at the meetings and distributed a fact sheet, along with a question and answer brochure. News releases describing the draft EIS and its availability to the public were sent to the wire services, daily and weekly newspapers, and TV and Radio Stations. The congressional offices in the EIS area as well as numerous interest groups were contacted. Additionally, postpaid reply cards were sent to 1406 individuals in 37 states and another 4,945 cards were used for general distribution to the public in local field offices throughout the study area. These reply cards requested if an individual was interested in receiving a DEIS, and whether they wished to remain on the mailing/distribution list for the FEIS. As a result of these efforts, approximately 5800 copies of the DEIS were printed and sent to individuals and groups. Copies were also sent to BLM offices for general distribution and each governor's clearinghouse. (See Appendix L.)

The BLM EIS team received 411 letters (including testimony received at the Public Hearing) commenting on the DEIS during the comment period. The comments were grouped by resource concern and expertise required to respond. Then an interdisciplinary team prepared responses to the respective comments. Required changes in this FEIS were also developed following this team approach.

A number of letters were received after the close of the comment period (May 22, 1990). These letters could not be included as comment letters because of the late arrival dates. However, concerns raised in these non-timely letters had been aired previously by other commenters and are addressed in this document. Names and addresses of these respondents were incorporated into the overall mailing list and they will receive a copy of the FEIS.

It is important to note that a considerable number of respondents voiced strong support in regards to the quality of the draft EIS document, and BLM's proposed action. These comments were taken into consideration in the preparation of this final EIS. All letters regardless of content were placed in the EIS file of record.

## ISSUES/CONCERNS

Some issues/concerns were often repeated by commentors. These general concerns were grouped under the nature of common concern in the EIS section and responded to. Responses to each of the common concerns are provided below. Specific comments/responses are included later in this chapter. Copies of individual letters received are on file and will not be provided in this document.

### Common Concern:

#### Purpose and need section:

**Issue:** The area covered by the EIS is too large.

**Response:** The area covered in an EIS is not prescribed or limited by any law or regulation; it is determined by the size of area effected. The area covered in the EIS may be large, but it is designed to provide analysis on a regional basis to properly address the Bureau's treatment programs in 13 Western States. Site-specific analyses will cover smaller areas. (See NEPA Requirements Section in Chapter 1.) BLM has recognized the sizable geographic area identified within the study boundaries, but also refers readers to Tables 1-2 through 1-6 which show that less than 1% of the lands administered by BLM in the 13 State region will be affected by proposed treatment in a given year. This document complies with NEPA and related federal regulations. The regional vegetation and physiographic descriptions in Chapter 2 (Affected Environment) provide a basis for assessing environmental impacts which would occur as a result of the proposed action and alternatives on the natural and human environment.



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**Issue:** The scope of the EIS is too broad.

**Response:** Legal mandates such as the National Environmental Policy Act, Federal Noxious Weed Act, as amended, and Federal Land Policy and Management Act require analysis, documentation, and public review of proposed actions and that the resulting impacts be disclosed. Full EIS scoping procedure was followed (see earlier explanation in this chapter) and all public input was taken into consideration in the design of the EIS. Scoping also included needs identified in BLM land use plans. The EIS covers issues raised during scoping and if it seems too broad, it is because the EIS covers the breadth of issues raised during scoping. We believe that the scope of the EIS is reasonable and justified given the existing Bureau vegetation treatment program.

**Issue:** Why aren't EISs being prepared for BLM's vegetation treatment in each State?

**Response:** An EIS by every state would each address virtually the same issues and actions. Agencies are directed by the Council on Environmental Quality Regulations for Implementing NEPA to reduce excessive paperwork by using program, policy, or plan EISs to eliminate repetitive discussions of the same issues. Agencies are also encouraged to combine proposals and/or actions which are related and evaluate them in a single impact statement. The preparation of an EIS for vegetation treatment in each state would simply increase the time, effort, and cost the BLM 12 to 15 times more with no measurable increase in quality.

**Issue:** Describe how and when environmental assessment (EAs) will be prepared on site-specific treatment projects and what type of effort is made to insure State and local governments and private interest involvement in that process.

**Issue:** What is the relationship of this document (EIS) to site-specific treatment project environmental assessments (EAs)?

**Response:** Site-specific analysis and the appropriate level of documentation will be completed prior to the implementation of vegetation treatments. An Environmental Assessment (EA) would not always be prepared since an EA is only one of several methods for documenting such analysis as provided for in BLM's NEPA Handbook (H-1790-1). Subsequent site-specific analysis and documentation can tie to this EIS, land use plans with supporting EISs, other Programmatic EISs (i.e., Northwest Area Noxious Weed Control Program EIS), and all appropriate activity/project plans with supporting environmental documents which have had the public's input and involvement.

**Issue:** Some comments indicated the BLM did not meet the NEPA requirements for soliciting public participation in this EIS.

**Response:** BLM has complied with all NEPA guidelines for public participation in this EIS. Please refer to earlier discussion in this chapter.

**Issue:** Benefits are skewed toward livestock production, and the document tries to justify livestock forage allocations.

**Response:** It is not the intent of this EIS to emphasize livestock production or justify forage allocation. The intent of this EIS is to analyze potential impacts of treatments identified in BLM's land use plans. These plans carry out the overall guidance given BLM in various laws including Public Law 95-514 (Public Rangeland Improvement Act) to "manage, maintain, and improve the condition of the public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process..." The land use plan makes land use allocations among the various resources or combinations of resource values, i.e., livestock grazing, wildlife, wild horses and burros, water quality, etc.

**Issue:** Proposed treatments favor range or livestock with little to no consideration given other programs/resources.

**Response:** Vegetative treatments are not intended to favor livestock over other resource activities or programs. Much of the Bureau's vegetative improvement guidance is found under rangeland or grazing headings. PUBLIC LAW 95-514 (Public Rangeland Improvement Act, PRIA) defines range improvements to include "any subactivity or program on or relating to rangelands which is designed to improve production of forage, change vegetative composition, control patterns of use, provide water, stabilize soil and water conditions and provide habitat for livestock and wildlife." Design features and mitigation have been expanded in the final EIS describing procedures considering other resource programs (activities) or resources.

Also see Appendix J for references and further discussion of design features.

**Issue:** Many commentators wanted to know how we determine desired plant community, undesirable plant communities or species, noxious weeds, and target plants, and what uses they are based on.

**Response:** Strategies and objectives for either maintaining or changing a particular vegetation community are common elements of grazing, wildlife habitat, recreation, forest, and watershed management plans. The concepts of desired plant community,

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desirable and undesirable species, and target species are no more than tools which can help a manager set vegetation management objectives and evaluate management progress. A desired plant community is the kind, amount, and proportion of vegetation which best meets land use objectives for a particular site, and which must be within the site's capability to produce through management or a combination of management and land treatment. Desirable plants are species which management seeks to enhance or maintain to meet desired plant community objectives for a particular site. Undesirable plants are species which are not wanted on a site in large amounts from the standpoint of site management objectives. Desirable and undesirable species will vary from site to site, depending on specific site objectives and the combination of land uses that occur in an area.

Target plants are species which may be targeted for biological, chemical, mechanical, or manual treatments in the listed states on selected sites, under certain conditions, to meet specific management objectives on the treatment site. The result is new combinations of species which will better meet management objectives for a particular site. Target plants may include both noxious weeds or native species. Target species which are native plants are generally a desired component of the new vegetation community, but in a different form or abundance than before treatment.

The list of target plant species has been updated in the text (See Appendix I, Section I1). Also, the lists of plant species that have been approved for treatment in the states addressed in the Northwest Area Noxious Weed Control Program (NANWCP) have been duplicated and placed in this EIS (See Appendix I, Sections I2-1, I2-2 and I2-3) to enable a comparison between the target species addressed in both EISs.

A noxious weed, as defined by the Federal Noxious Weed Act (PL 93-629) is a weed that causes disease or has other adverse effects on man or his environment and therefore is detrimental to the agriculture and commerce of the United States and public health. Noxious weeds are designated and regulated by various State and Federal laws. In most cases, noxious weeds are also nonnative species. Noxious weeds are generally considered undesirable species wherever they occur, are often target species for some form of treatment to decrease their abundance and control their spread into unoccupied areas.

Other concerns related to the scope of the document were expressed by commentators who maintained that unspecified aspects of microclimates/ecotones/ecosystems were not addressed in the analysis. Microclimate analysis, relating to how temperature, light, and moisture factors would

change, (for example, for a grass plant that was sheltered under a shrub before treatment and exposed after treatment) are beyond the scope of this document except as reflected in analysis of factors which can affect general treatment response in the DEIS, Chapter 3, Section 1, pages 3-5 through 3-29. Ecotone analysis, relating to the gradient that occurs between vegetation types, is dealt with conceptually in the new discussion of vegetation dynamics in the introduction to Chapter 2, and in the individual vegetation analysis region descriptions in Chapter 2. More specific analysis is only possible in a site-specific Environmental Analysis which can address specific juxtaposition of vegetation types where treatments have been proposed. Ecosystem analysis was handled through discussion of impacts to vegetation analysis regions in Chapter 3, which though broad, represent the major ecosystems managed by the Bureau in the Western U.S. and in which the vast majority of treatments proposed in the EIS would occur.

**Issue:** Importance of the ground water resource as a drinking water supply was underemphasized.

**Response:** We agree. We have added additional emphasis to the use of ground water as a drinking water supply.

**Issue:** Water quality concerns should be examined at the project specific level. State agencies for the enforcement of water quality should be contacted. Best Management Practices (BMPs) should be used.

**Response:** Each state BLM office as well as state water quality regulators have specific on-the-ground procedures for the review of various plans. Some states will require the BLM to have each project reviewed that might impact water quality. Many of the agreements between BLM and state water quality regulators are being developed at this time. The Best Management Practices (BMP) concept will be utilized in most state/BLM agreements. The detail from these agreements will have to be accommodated at the state and local level. Also see the Tiering section for additional explanation.

**Issue:** Water quality Monitoring must be considered, particularly in relation to BMPs. Monitoring should be placed upstream and downstream where BMPs are to be implemented to document their effectiveness.

**Response:** Monitoring is an important consideration and generally covered in the Implementation Section under Monitoring. Best Management Practices (BMPs) and other mitigating measures related to water quality will require monitoring according to this section. Specific monitoring attributes will be determined at the site specific level usually in coordination with the state water quality regulators.

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dination with the state water quality regulator. The BLM intends to use a "feedback loop" process of evaluating BMPs and implementing more effective BMPs where necessary.

**Issue:** Native American religious and cultural concerns are not being addressed in the EIS.

**Response:** The Cultural Resources sections of Chapters 1, 2, and 3 have been revised to clarify the BLM's recognition of the need to deal with Native American concerns. In addition, these concerns will be addressed in project specific environmental analysis and appropriate documentation, in a manner consistent with BLM manuals.

**Issue:** Cultural resources need to be addressed in project specific environmental analyses.

**Response:** Section 106 of the National Historic Preservation Act, and its implementing regulations (36 CFR 800) require project specific inventory, evaluation, and treatment where needed, before a federal action is authorized. As appropriate, the BLM will comply with these requirements through consultation with the State Historic Preservation Officer and Advisory Council on Historic Preservation.

### Common Concern:

#### Tiering:

**Issue:** Several letters expressed concern with how this EIS relates to Resource Management Plans (RMPs).

**Response:** Resource Management Plans (RMP) and their EISs provide the only place where land use allocations for various resource uses (i.e., Areas of Critical Environmental Concern (ACEC), Wildlife, Grazing, Recreation, etc.) are made. This EIS (Vegetation Treatment on BLM Lands in Thirteen Western States EIS) analyzes the combined effect and treatment method alternatives for the vegetation treatment needs identified in the various RMP/EISs prepared by field offices in each state. Please see Figure 4-1, which illustrates the relationship of this level of environmental analysis to the BLM organizational structure.

This is the umbrella or blanket document under which subsequent environmental documents will address specific actions which have a more narrow focus.

### Common Concern:

#### Alternatives:

**Issue:** Why does the BLM identify the "no action alternative No. 5" as "continue present management" rather than simply "no action as no treatment?"

**Response:** No change from the current management is considered to be the appropriate no action alternative when ongoing programs initiated under existing legislation and regulations will continue (40 CFR 18027). The no action alternative as presented examines the impacts of management actions and decisions for such ongoing programs in existing Land Use Plans. The alternative of "no treatment" was considered early in this process and not analyzed for this reason.

### Common Concern:

#### Treatments:

**Issue:** Add tables of treatment by State and treatment method.

**Response:** Subject tables have been included in the text as Tables 1-2 through 1-6.

**Issue:** Add tables of treatment by vegetation type.

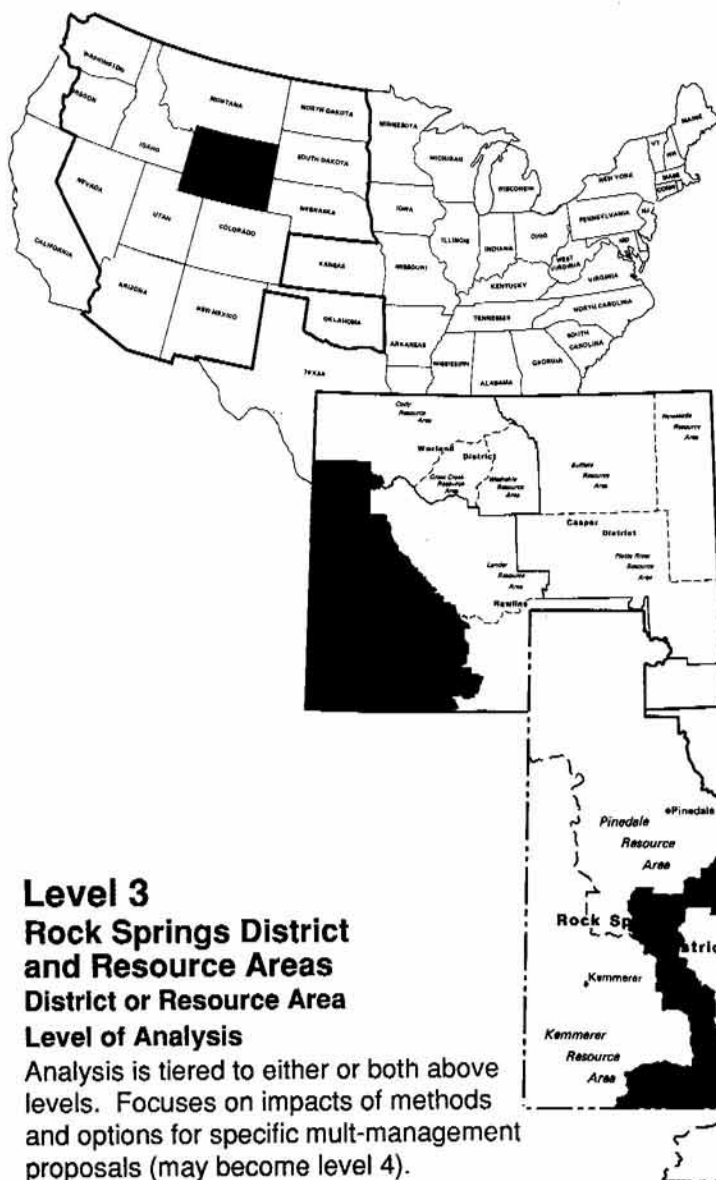
**Response:** It was decided to omit these tables, and was concluded that the treatment by state is adequate and will not affect impact analysis.

**Issue:** Correct discrepancies in acreage between tables that are added.

**Response:** This has been accomplished. A footnote has been added to Table 1-1 indicating that an estimated 25 percent of prescribed burning acreage is a followup treatment to chaining and spraying; thus, total treated acreage would be reduced accordingly.

**Issue:** Explain if acreage figures shown are a quota, maximum, or estimated annual acreage, and how they are dependent upon funding from year to year.

**Response:** All acreage figures used in this document are an "estimated annual acreage." Several factors may cause a reduction or increases in acreage in any given year, such as available funds, other workloads, revised land use planning, Threatened and Endangered species conflicts, cultural and visual resources and management concerns.



## Level 1

### Thirteen State EIS Study Area

#### Regional Level of Analysis:

EIS with broad, regional description of resources and broad, environmental impact analysis. Focuses on general policies.

## Level 2

### State of Wyoming

#### BLM Administrative Offices

#### Statewide Level of Analysis:

Analysis is tiered to level 1 and is prepared for statewide programs. Focuses on the impacts of methods, options, and individual state issues.

## Level 3

### Rock Springs District

#### and Resource Areas

#### District or Resource Area

#### Level of Analysis

Analysis is tiered to either or both above levels. Focuses on impacts of methods and options for specific multi-management proposals (may become level 4).

## Level 4

### Big Sagebrush Burn Area

#### Project Level of Analysis:

Analysis is tiered to any or all above levels. Focuses on site specific impacts of implementing a single management proposal.

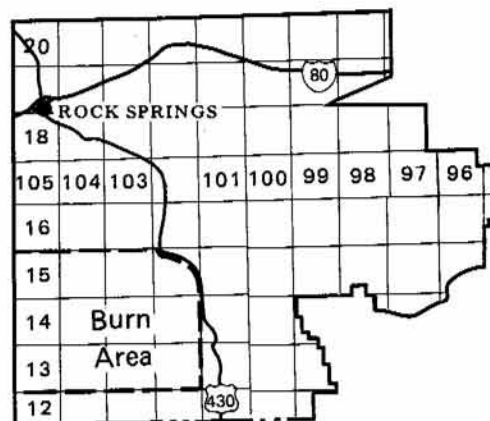


Figure 4-1  
Relationship of EIS to BLM Field Offices



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**Issue:** Why are less acres to be treated under Alternatives 2-5?

**Response:** The Council on Environmental Quality (CEQ) regulations require that the EIS analyze a reasonable range of alternatives. Alternative No. 1 is the Bureau's proposed action to meet land use objectives, and has a combination of all the different vegetation treatments. Alternatives 2-4 restrict at least one of the different vegetation treatments, therefore reducing total acres to be treated. Alternative 5 is the no action. See Chapter 1, Proposed Action and Alternatives for a complete description of each alternative.

### Common Concern:

#### Cumulative Effects:

**Issue:** Cumulative effects were not adequately addressed in the draft EIS.

**Response:** Cumulative impact, is defined in the regulations for Implementing the National Environmental Policy Act as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

This EIS presents the direct, indirect, and cumulative impacts of all proposed and reasonably foreseeable future BLM actions (described in Chapter 1) that would be implemented on an average annual basis for the intended life of the EIS (10-15 years). The impact assessment presented in this document also takes into account all proposed mitigation (described as design features and/or standard operating procedures).

Typically, the effects of past actions (BLM actions, as well as, actions of others) is accounted for in the description of the Affected Environment. This description serves as the baseline depicting current conditions, including trends in those conditions, as they exist just prior to the initiation of the proposed action or any alternative.

Discussion of cumulative impacts resulting from BLM actions and like actions (both present and reasonably foreseeable) of others is presented when such impact analysis is considered essential to making a reasoned choice among alternatives.

This EIS is a programmatic document and is intended to be tiered with existing Land Use Plan/

EISs and subsequent site-specific analysis and documentation for site-specific projects when proposed. The cumulative analysis documented and tiered with in all such applicable documents is considered during the site-specific decision making process.

### Common Concern:

#### Herbicide effects on wildlife:

**Issue:** Changes in the structure of vegetation, by the various treatment methods, will have a negative impact on the existing wildlife populations.

**Response:** An obvious impact of any treatment is the change in the vegetation structure before and after treatment. This vegetation community change, if intended to be permanent, or long-term, will result in a permanent, or long-term, change in the resident wildlife species. Some of these treatments are intended to restore past vegetation communities and would result in long-term changes in wildlife communities, hopefully restoring an historic wildlife community. The analysis of these long-term changes must consider the overall impact and significance of eliminating or replacing existing communities, and adding new wildlife communities, especially when special status species are involved. Some structural changes are much less dramatic than full community conversions and result in subtle changes and shifts in the wildlife community composition. The expected new community is weighed against the species being adversely impacted and the impacts weighed.

**Issue:** Use of herbicides is (1) detrimental to wildlife, (2) no herbicide treatments should be done, (3) especially no aerial application of herbicides should be allowed.

#### Response:

- (1) As a public land management agency, we make use of the best information available to make management decisions. We will only use herbicides that have been researched and tested and found to be acceptable by current standards for the proposed use. We will choose the herbicide that is the least impacting to the wildlife community in the treatment area and while still being effective against the target plant species (mitigation, Chapter 1).
- (2) We understand that tests on wildlife have been performed according to the existing regulations and the results have been appropriately interpreted, therefore, the label restrictions will be

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accurate and safe. We acknowledge the potential for adverse impacts to wildlife from improperly applied herbicides. However, these adverse impacts can be mitigated, and that will be the approach used within the BLM to protect wildlife species from herbicides.

- (3) In the Final EIS we have added mitigation to lessen the possibility of an adverse impact to wildlife. Specific mitigation has been expanded to strengthen the protection of riparian and aquatic areas (Chapter 1). Buffer zones are already required in the BLM's Chemical Pest Control Handbook, H-9011-1, which regulates our use of herbicides. The use of helicopters and maximum spray control nozzles will assure a greater degree of control of the specific areas receiving aerial applications. In ground applications the degree of control is always much greater.

To minimize impacts to fish and other aquatic wildlife, amitrole and dalapon are no longer proposed for use. Atrazine, clopyralid, diuron, simazine, triclopyr (butoxyethyl ester only), 2,4-D, or diesel oil carriers will be very carefully regulated and applied when the treatment area is adjacent to aquatic habitats. The required buffers and the use of the least toxic herbicides will minimize the potential impacts of herbicide spraying on aquatic systems. Without accidents there should be no impacts. It is our intent to minimize the unexpected adverse impacts under all treatments and alternatives.

**Issue:** Amphibians were not adequately addressed in the risk assessments. What is the impact of Tebuthiuron on amphibians?

**Response:** Research published by the Fish and Wildlife Service covering a comprehensive analysis of acute toxicity of 410 chemical pesticides on 66 species of freshwater animals (Mayer, F. L., Jr., and M. R. Ellersieck. 1986) found the amphibians, as a group, to be the least sensitive of all groups of organisms. Fish are generally 2 to 3 times more sensitive to herbicides than amphibians. Research on the effects of tebuthiuron on bullfrogs (R. Meyerhoff, personal communication. 1990) showed them to be 2 to 3 times more resistant than rainbow trout and bluegill. Therefore, our assumption is that if we protect the aquatic and wetland areas to prevent impacts to fish, we will be very safe for amphibians.

**Issue:** The risks of using herbicides on wildlife habitat were not adequately addressed in the impacts analysis. Are the herbicides accumulated in the food chain?

**Response:** As indicated in our analysis of impacts, the most toxic applications of herbicides occur in conjunction with maintaining rights-of-ways and oil and gas facilities. Fortunately these are very small acreages compared with the rangeland and other proposed applications. None of the chemicals being proposed were found to be bioaccumulative. Except in extreme situations there does not appear to be any real threat to wildlife from the proposed applications of herbicides. The higher risk situations must be monitored on a local level to assure that no significant impacts to wildlife are occurring.

In order to understand the potential impacts of our proposed actions, both the analysis of impacts of the proposed treatments in the final EIS document and the risk analysis in the appendixes should be reviewed. Appendix E, sections 6, 7, and 8 are a summary of research on the physiological toxicity on terrestrial and aquatic wildlife, for the 19 herbicides being proposed for use. This analysis is the basis for determining the likely adverse toxic impacts of our proposed actions on potentially impacted wildlife species. In the Final EIS, additional discussions of the potential adverse impacts of herbicides to wildlife, as a result of our proposed actions, have been incorporated. On the basis of these potential adverse impacts, mitigation has also been proposed that would significantly lessen the likelihood for these possible adverse impacts to occur.

### Common Concern:

#### Economic analysis:

**Issue:** Many people asked for a copy of the Economic Impact Statement on Vegetation treatment of BLM lands.

**Response:** Regulations do not require a separate document from the EIS on economic impacts. Economic impacts for the proposed action and alternatives are discussed in the EIS. See Chapter 3, Section 1.

**Issue:** The EIS should consider the economic impact of the loss of the pinyon pine on local communities that collect pinyon nuts for food.

**Response:** Chapters 1, 3, and 4 have been revised to consider pinyon nut use by Native Americans. This and other nut uses should be covered in land use plans and the effects of treatment will be considered in project specific analyses and environmental documentation.

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**Issue:** The proposed treatments are not cost effective and would not yield any return on investment.

**Response:** The BLM is not required to conduct Benefit/Cost analysis of alternatives in a programmatic EIS. The BLM Manual Handbook H-1740-1, Renewable Resource Improvement and Treatment Guidelines and Procedures, presents procedures on when and how to conduct investment analyses. This handbook provides general and program specific guidance about when or what investment analysis is required or recommended.

In accordance with this guidance, after the EIS and when specific treatments are proposed, an investment analysis will be conducted. This analysis might be for the specific treatment proposed or for groups of actions as in a resource management activity plan.

### Common Concern:

#### Biodiversity:

**Issue:** Many commentors expressed concern of the effects of proposed vegetation treatments on biodiversity, or took issue with impact analysis which stated that diversity could be improved in some situations by vegetation treatment.

**Response:** Vegetation treatment can affect vegetation diversity, as the term is used in the Chapter 3 impact analysis, by changing the number and kinds of species or life-forms, the mix of age and size classes, and distribution of vegetation communities on the landscape. Diversity in this sense, the variation of these kinds of characteristics, may be enhanced by vegetation treatment. The discussion is about vegetation, not the whole realm of organisms and interactions that encompass biological diversity as defined in the Glossary of the Final EIS. The introduction to Chapter 2 in the Final EIS discusses the role of disturbance of various kinds and magnitudes in shaping the past and present of the vegetation analysis regions.

Certain treatments can be said to enhance diversity by restoring historic native vegetation as much as possible, such as when riparian areas are reclaimed from tamarix, when sagebrush and perennial grass are established in cheatgrass stands, or when grassland cover is reestablished on brush-dominated semidesert grassland. Aside from whether there are more or fewer species present after these kinds of treatments, such treatments contribute to restoration and maintenance of native eco-

systems, and as such are considered to contribute to maintenance or restoration of vegetation diversity.

In response to changes made in the vegetation communities by the vegetation treatments and the results summarized above, the animal communities may also exhibit increased diversity through the creation of new habitats and edges to the previously existing habitats. Any change from the previous situation will result in new habitats and niche combinations that will be suited to a new community of animals or different combinations and relative abundance of existing animal populations.

These changes will be considered prior to any planned treatment. If the predicted change in the existing community is significantly detrimental to the welfare of existing animal populations, the project can be modified or cancelled. If the project would not have a significant negative effect on existing populations or would be beneficial to existing populations or create new habitat for other species, then the project would be beneficial to the diversity of species in the area. It is this analysis process on specific project proposals that assesses the detrimental and beneficial impacts to biological diversity, determines the proper course of action, and best management practices for the situation. The relative abundance and status of the species (e.g. special status species) must be strongly considered during this analysis.

Negative impacts on animal species diversity could occur in situations where existing habitat was in short supply and the treatment would significantly reduce this habitat. However, in situations where the existing habitat was extensive and dominating, the creation of variation in this habitat through vegetation treatment would result in creating habitat edge and a new type of habitat, which could increase the diversity of the biotic community within the original area.

The special status species screening process is intended to protect the rare plants, animals, and their habitats, that contribute to biological diversity at the genetic and species level. As maintenance of biological diversity in the broader sense depends on maintenance of ecosystem functions and interactions, local disturbances and modifications from treatments can have varying effects. It is a complex situation to analyze and requires consideration of a variety of factors during project planning, such as size and placement of treatment relative to total available habitat at local or regional scales, and others which are still being researched, such as organisms or species groups that indicate critical points in ecosystem health.



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### Common Concern:

#### Risk analysis

**Issue:** There was inadequate coverage of the potential for ground water contamination from herbicide application.

**Response:** We agree that the potential for ground water contamination from herbicides was not adequately addressed in the draft. We have incorporated several additions to the sections to address the ground water concerns. See Chapter 3, Section 1.

**Issue:** Several of the aquifers in the DEIS area are inherently susceptible to leaching and contamination.

**Response:** We agree that the potential does exist in some areas. We did not intend to dismiss the potential. Rather, the impacts associated with a high potential area would have been avoided through the application of design features. We envision that the procedures would likely be adopted as Best Management Practices (BMPs) by the appropriate state agency. These practices have been included under Mitigation. Also see Figure 2-8.

**Issue:** Eight of the 19 herbicides proposed for use by BLM are ranked as having high leaching potential... The EIS should provide additional information on this concern.

**Response:** The DEIS listed very few data on the leaching potential of pesticides. Information has now been included where it is available. The Surface Water Impacts and the Ground Water Impacts in the Chemical Methods of the Environmental Impacts Section have been rewritten to reflect the leachable pesticides identified in EPA (1987).

**Issue:** Many of the herbicides are not included in EPA drinking water standards. It is wrong to mislead the public into thinking that there are strict drinking water standards for these herbicides.

**Response:** We agree that there are many compounds for which drinking water standards are not developed. We do not believe that anything in the statement about drinking water standards implies that there are strict standards for herbicides. Monitoring standards may be established by the state water quality regulator. Based on our standard operating procedures, any herbicides from our operations reaching the ground water in any significant level causing environmental or health effects would be unacceptable.

### Common Concern:

#### Emphasis of noxious weed program

**Issue:** Not enough emphasis was addressed on noxious weed management.

**Response:** The text has been revised to address the noxious weed management program to a greater detail. See chapter 1 sections Program Objectives, Weed Management Treatments and Design Features, Treatment Method Descriptions (Biological and Chemical).

As a concept that uses a variety of techniques to control unwanted plants or animals, integrated pest management (IPM) implies that all available chemical treatment methods could be used. Both effectiveness and economic efficiency would be considered in making options. A high proportion of the expected control acreage is proposed for the spraying of herbicides because existing information on infestations and the relative effectiveness and costs of possible control programs reveal that spraying is the best way to achieve a reasonable amount of control. Research into alternative techniques will do the job in some of the situations now proposed for herbicide spraying. Because the Proposed Action is an IPM alternative, alternatives to herbicides would be adopted when and where they are found to be effective and efficient.

**Issue:** In Appendix I, not all weed species are listed in some states.

**Response:** See revised Appendix I-1.

**Issue:** Biological control agents should be used more.

**Response:** The biological control methods section has been expanded in the text. Three lists concerning biological control agents have also been added in Appendix C (2 thru 4).

As biological control agents become available, BLM will continue to increase their use. Estimated costs to develop a biological control program per weed species are often expensive. Usually a complex of at least three to five different biological control agents, such as insects, must be used to attack an individual weed species infestation site. This includes different agents that feed on the blossoms or seed heads, leaves, stems and root systems. In addition to the need for a complex, often 15 to 20 years are needed to bring about an economic control level, especially on creeping perennials.



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### SPECIFIC COMMENTS AND RESPONSES

Each person, organization, or agency that provided written comments are listed in Appendix K.

Figure 4-2 depicts the summary of responses received in regards to the Alternatives presented in the Draft EIS. Figure 4-3 depicts the number of responses received on the DEIS by respondents in each state.

As each comment (including letters, testimony from public hearings, and written comments submitted at public meetings) was received, it was assigned a sequential identification number according to its state of origin (i.e., the first letter received was from Utah, and was designated UT-0001). However, some letters were assigned numbers in the 2500 and 5000 series for data entry purposes. Each comment letter was placed in the EIS file by numerical sequence. Appendix K is a listing of respondents with respective identification numbers.

Where possible, public concerns were addressed in the common concerns section. Specific comments needing a more in-depth response follow:

#### NM-0038, Thomas H. Wootten.

**Comment:** "Impacts on wildlife discussed in the EIS do not include important segments of the indicated ecosystems. No where do I see mentioned the potential impact on amphibians, reptiles, and insects (especially ground dwellers such as ant and termites) and arthropods. These are important parts of any ecosystem."

**Response:** The scope of this document is broad. The discussions of wildlife communities focus on the those communities which have the best documentation of impacts, those with the greatest economic impacts, the species for which we are most likely to perform habitat treatments, and special status species. The small wildlife species are too numerous, varied, and generally too poorly studied to make specific statements of potential impacts on the scale of this EIS. These other species are not overlooked, however, a site-specific analysis will be performed on each of the proposed treatments on public lands prior to implementation. These site-specific analyses should consider all species of wildlife that are determined to be impacted by the proposed action, regardless of visibility, public interest, or status.

#### AZ-0052, Dan Fischer.

**Comment:** "Prescribed burns is a problem because most fires are set in spring and summer mainly for your convenience. This might be because of budget, fire crew buildup, etc. This is also the bird nesting season. The fall would be more acceptable from that viewpoint."

**Response:** Statements have been added to mitigation (Chapter 1) and in the summaries of the impacts (Chapter 3) of mechanical, prescribed burning, and chemical treatments.

#### NM-0066, Martha Cast.

**Comment No. 1:** "On Exec-5, under Climate and Air Quality, the statement that 'local residents are acclimated to these sounds' is certainly not reasonable. Just because there is air traffic all over the West, that does not mean that people or animals living in or near areas to be treated aerially are accustomed or willing to adapt to having low-flying aircraft dispersing noxious chemicals for the crop dusters and low-flying military aircraft that pollute my local airspace manage to scare people and animals on a daily basis; we still are not acclimated."

**Response:** The Bureau concurs. The statement has been removed.

#### NM-0066.

**Comment No. 2:** "Although no riparian areas are to be treated by aerial chemical application, there will be many semi or xeri-riparian areas in the bottoms of small arroyos that will be affected."

**Response:** Mitigation has been added for protection of xeroriparian areas for wildlife (Chapter 1).

#### NM-0066.

**Comment No. 3:** "Why is BLM proposing to use tebuthiuron which has a long persistence in soil, but has no long term studies done on any mammals and has no studies on amphibians or reptiles?"

**Response:** Page E6-11 of the DEIS indicates that a 3-generation rat study and a 162-day cattle study were performed using tebuthiuron. The top of column 2 on page E8-1 of the DEIS states that

## Summary of Letters Received by State

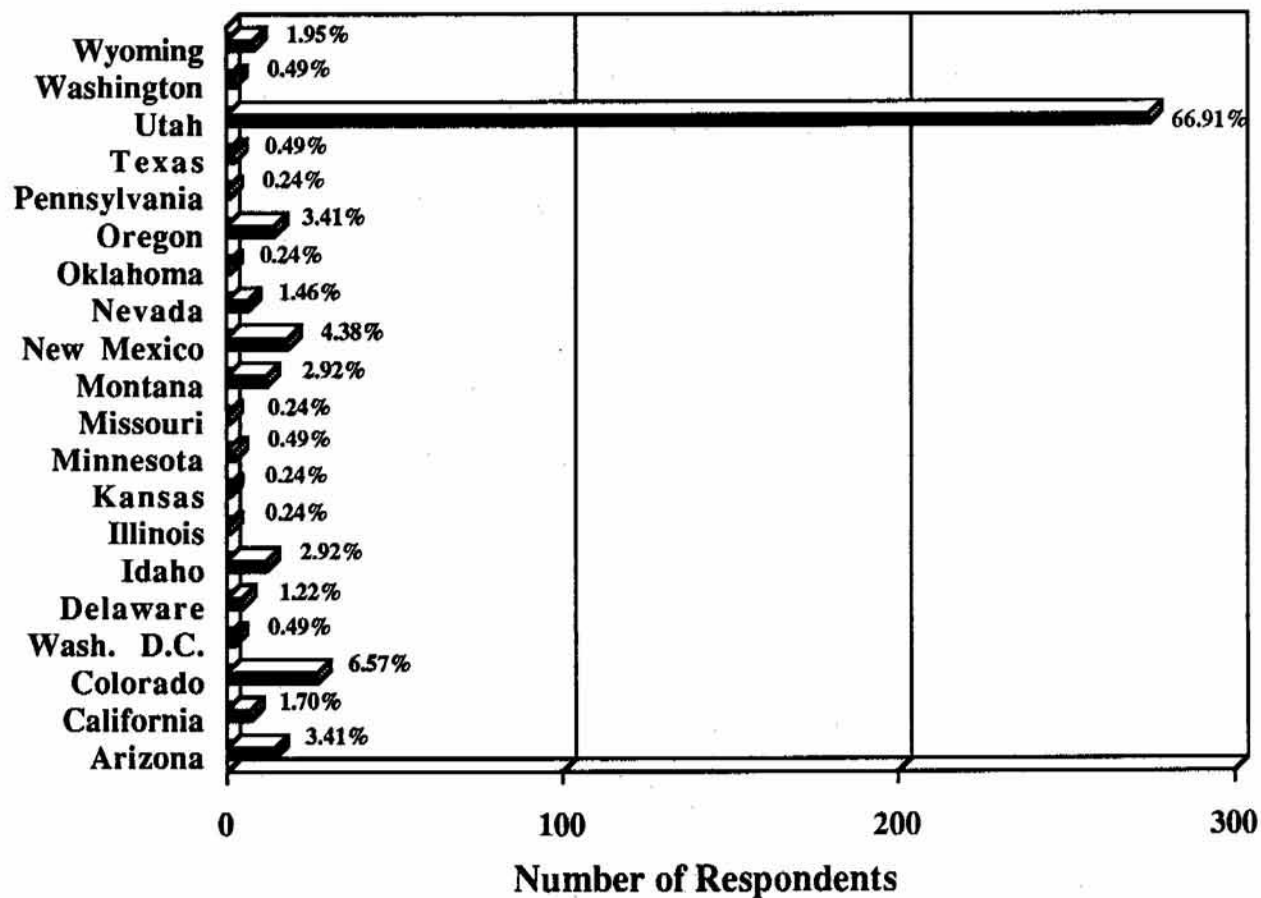


Figure 4 - 2  
Summary of Letters Received by State

## Expressed Preferences on the Proposed Alternatives

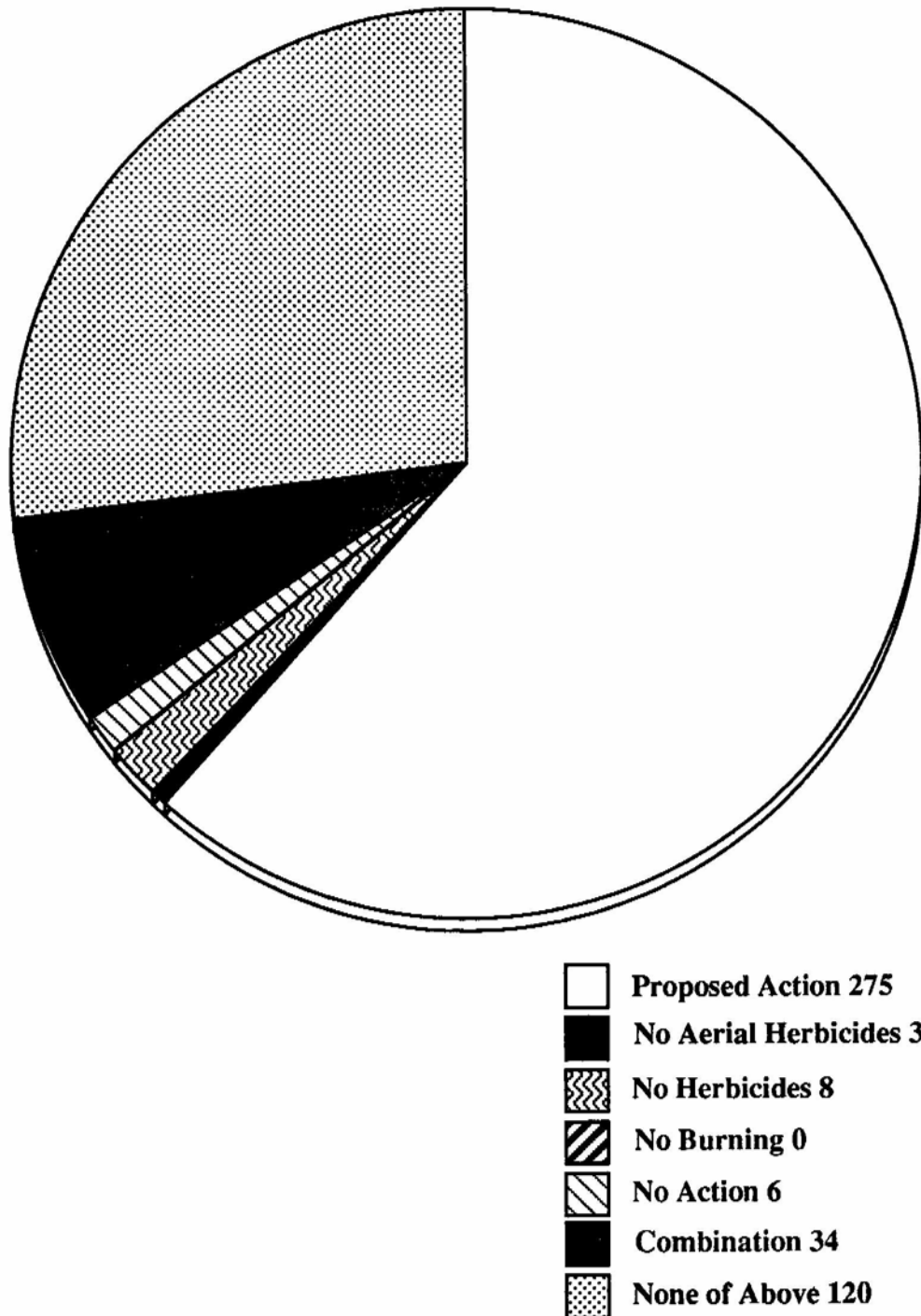


Figure 4 - 3  
Expressed Preferences on the Proposed Alternatives

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chronic wildlife studies were not analyzed because the herbicides degrade relatively rapidly and the sites are normally treated only once a year. On the same page is a criteria used for Surrogates for Amphibian and Reptile Toxicity.

### NM-0067, Steven M. Cather.

**Comment:** "In summary, I feel the draft EIS does not adequately address the long-term effects of vegetation treatment on areas that may be adversely impacted by increased sediment yields and resultant channel aggradation."

**Response:** Site-specific treatment design should incorporate sufficient mitigation to assure significant overland flow does not occur in situations where a significant fisheries or riparian resource would be adversely impacted. Standard Operating Procedures and Treatment Design Features found in Chapter 1 have been written to respond to potential adverse impacts to riparian and aquatic resources should unusual situations occur. Treatments will be avoided in the circumstances you describe, as mitigation of surface run-off would be very difficult to control.

### NM-0073, Jeanne Verploegh.

**Comment No. 1:** "Some herbicides are not suited for certain environments. Soil types, vegetation and wildlife should be considered for the application of each herbicide. The EIS should state which herbicides would be used for which of the above-mentioned items."

**Response:** See Toxicity and Environmental Fate summaries for each herbicide (Chapter 1).

### NM-0073.

**Comment No. 2:** "Page Exec-7 of the EIS states that effects of vegetative treatment will be minimized. Several of the herbicides kill more than only target species. Mechanical and burn treatments are even less selective."

**Response:** The basic philosophy of vegetation management and treatment is based on the premise that knowledge of ecosystems, succession, and the application of the results of research and experience can be used to improve the condition of degraded lands or areas invaded by noxious plants. No treatment is proposed unless there is an existing problem that appears to be correctable through vegetation treatment and improved management following treatment.

The term "minimal," when used in the context of analysis of impacts of a treatment, refers to creating the least possible disruption in the existing functioning of the ecosystem necessary to achieve the planned objectives of the treatment project, not that there will be no effects or impacts.

Each proposed treatment will have a site-specific analysis conducted prior to on-the-ground implementation. These analyses consider the beneficial and adverse impacts of conducting the proposed treatment and whether to proceed with the proposed action, modify the proposed action, or drop the proposal.

### NM-0073.

**Comment No. 3:** "You need to explain why one species, like antelope, should take precedence over many species of amphibians and reptiles for habitat."

**Response:** The impact that will occur as the result of a particular land treatment must be analyzed in the site-specific environmental analysis. The responsiveness of wildlife communities to recover after treatment is one of the factors to be considered. The advantage to the benefiting segment of the wildlife community should be at least as significant as the loss by the community displaced or disrupted. And, the loss should not be significant to the whole of the species impacted, nor should habitat for a special status species be lost in favor of habitat for a common species.

### NM-0073.

**Comment No. 4:** "The EIS contains no information on the long term effects of the chemicals, or the effects from long term exposure to the chemical's break-down products."

**Response:** See Appendix pages E3-16 to 61 for data on the subchronic and chronic toxicity studies for the individual herbicides. Also, see new data presented in Chapter 3 impact analysis in the Soil and Aquatic Resource section and Table 3-3 for soil persistence information.

### NM-0076, Curtis Verploegh.

**Comment No. 1:** "Although normally dry arroyos do not meet your definition of riparian, the woody plants that grow there provide cover and nesting sites. As mentioned in another comment no effort has been made to miss any but the very largest drainages. This is a practice that needs to be addressed."



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**Response:** (See response to NM-0066 Comment No. 2.)

### NM-0076.

**Comment No. 2:** "The breakdown products have not been investigated and should be."

**Response:** Since the risk assessment includes analysis of synergistic effects, it is recognized that more than just the parent is possibly present in any given situation.

### NM-0078, Robert Pine.

**Comment No. 1:** "There is a large potential for negative impacts to wildlife (by wildlife I mean more than game animals; I also include reptiles, insects, microbes and any organism that plays an ecological role in an ecosystem.)"

**Response:** As a public land management agency we make use of the best information available to make management decisions. We will only use herbicides that have been researched and tested and found to be acceptable by current standards for the proposed use. We will choose the herbicide that is the least impacting to the wildlife community in the treatment area while still being effective against the target plant species. If EPA withdraws registration, the herbicide is not safe for the previous labelled use and we will discontinue that use.

### NM-0078.

**Comment No. 2:** "...no consideration was given to the persistence of the listed herbicides or to the toxicity of their breakdown products."

**Response:** See FEIS Appendix, page E8-1, top of the second column for a discussion of persistence, and see Table 3-6 in the FEIS for soil persistence. Since the risk assessment included a quantitative analysis of synergistic effects, it is recognized that more than just the parent compound is possibly present.

### UT-0079, Ronald M. Lanner.

**Comment:** "It appears to me that chaining and 'converting' woodlands is in direct opposition to managing them as forests [as discussed by David Tidwell and Edward Spang in papers on BLM policy which appear in the *Proceedings—Pinyon Juniper Conference*, Reno, NV, January 13-16, 1986, General Technical Report INT-215, 1987, pp. 5-8 and 489-492]."

**Response:** The papers cited do indeed indicate that the millions of acres of pinyon-juniper woodlands managed by BLM are considered as part of the forest land resource. By this, we mean that BLM recognizes the distinct and important values of woodlands as a forest land resource, that they can be managed with various forestry and silvicultural techniques, and that the value of these woodlands as a forest resource must be weighed in any decision to manage them as non-forests. It is still the province of a local manager, through a land use plan, to determine whether local land use objectives will be better met by converting a woodland site or by leaving it in woodland.

Type conversion of woodlands is a site-specific land use decision, based upon the kinds and levels of land uses agreed to in the land use plan, economics of any proposed conversion, site capability to support a different mix of vegetation, and values realized by type conversion vs. values diminished or foregone. Type conversion of pinyon-juniper as currently practiced leaves islands of trees and results in a mosaic of vegetation that does not preclude restoration of forested cover should that become the desired plant community for a converted site at some time in the future.

The relatively small amount of type conversion proposed in the EIS should not detract from the substantial remaining acreage which is being maintained as a legitimate forest type.

### WY-0085, Thomas E. Marceau.

**Comment:** "Cultural resources need to be addressed in project specific environmental analyses."

**Response:** Section 106 of the National Historic Preservation Act, and its implementing regulations (36 CFR 800) require project specific inventory, evaluation, and treatment where needed, before a federal action is authorized. As appropriate, the BLM will comply with these requirements through consultation with the State Historic Preservation Officer and Advisory Council on Historic Preservation.

### NV-0086, Alice M. Baldrice.

**Comment:** "Cultural resources need to be addressed in project specific environmental analyses."

**Response:** See response to WY-0085.

### AZ-0088, Dennis W. Sundle.

**Comment 1:** "...Of course, we have observed that your document briefly discusses surface water and

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groundwater conditions in the various vegetation zones, and does not mention any impacts on water yield. Although our study focuses on the chaparral, mixed conifer, and ponderosa pine vegetation communities, the process by which we estimate effects on multiple resources may be of interest to BLM."

**Response:** Such information would be of great value in assessing site specific actions and selecting Standard Operating Procedures and Best Management Practices. District Offices responsible for the preparation of such site specific assessments would likely contact your staff as projects are planned.

### WA-0094, Sam Wright.

**Comment No. 1:** "...under Fish and Wildlife' in Table 1-4 (page 1-27), the statement under Alternative 1 begins with No significant impact on fish. ' However, Alternative 2 is described in part as less risk to fish from herbicide drift' and Alternative 5 carries the partial description of less overall impacts than Alternative 1...."

**Response:** The Summary of Impacts by Alternative Table 1-9 (Table 1-4 in the DEIS) has been revised.

### WA-0094.

**Comment No. 2:** "...in the paragraph under the heading Chemical Methods' on page 3-53, we note the following admission: Near riparian areas, using chemicals to control vegetation can increase sedimentation, which can reduce or eliminate suitable spawning substrate."

**Response:** The statement on page 3-53, and similar discussions, have been qualified to state that even though these impacts would be possible, they should not occur because we will modify or mitigate our proposed action to prevent this degree of impact.

### WA-0094.

**Comment No. 3:** "We also recommend that any herbicide uses in or near habitats supporting anadromous fish should be delayed until after June 15 of each year. This would allow adequate time for the yearling salmon smolt populations to vacate these areas."

**Response:** Your suggestion has been incorporated into mitigation section in Chapter 1. The June 15 date was not specifically included because the sensitivity period of species may vary over the EIS area. We have also strengthened the treatment of fisheries throughout the document.

### MT-0095, K.L. Cool.

**Comment No. 1:** "The summary of impacts by alternative suggested that introduction of significant amounts of herbicides into streams would be unlikely. Thus, no significant impacts to fish were anticipated. This may be correct, but in the unlikely event that herbicides were introduced, impacts to fish would be significant. Additional mitigation measures to reduce the likelihood or to abate the effects if an introduction occurred would include: (4 mitigation measures recommended)."

**Response:** These suggestions have been incorporated into the document as design features in Chapter 1. We have also strengthened the treatment of fisheries throughout the document.

### MT-0095.

**Comment No. 2:** "The DEIS suggested that adverse impacts to wildlife would be short-term and localized. This describes wildlife response to effects of the treatment. However, the treatments are intended to change the composition of plant communities. The long-term effects to wildlife will depend upon the purpose of the treatment and whether it was successful."

**Response:** Additional discussion has been added in the analysis of alternatives to reflect the intended permanency of some habitat type conversion treatments.

### MT-0095.

**Comment No. 3:** "Reduce frequency and rates of application of herbicides by timing application to the vulnerable phenological events of the target plant species."

**Response:** Refer to Chapter 1, Standard Operating Procedures section, on frequency and rates of application of herbicides by timing application to the vulnerable phenological events of the target plant species.

### OR-0097, George Osterlag.

**Comment:** "The BLM should be trying to remove the environmental damage from planting this exotic [crested wheatgrass] and not be worrying about controlling native vegetation. Any planting of exotic species should be halted."

**Response:** BLM policy regarding introduction of exotic species requires evaluation of whether native species will be displaced or adversely affected, anal-

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ysis of potential impacts to biological and genetic diversity of potentially affected native species, and determination that a proposed introduction will not adversely affect any natural ecosystem. BLM is not aware of ecological studies which show that crested wheatgrass has caused environmental damage in western ecosystems by displacing and excluding native species or invading unoccupied sites by natural spread. Such behavior is well documented for other exotic species such as cheatgrass, medusa head, and tamarix. Throughout much of the intermountain west, crested wheatgrass is the only native or nonnative cool season grass adapted to local climatic conditions, available at reasonable cost, which meets local land use plan objectives for spring-fall forage or fire resistance, which can also be seeded and successfully established. A number of other nonnative species are listed as target species in Appendix I.

### UT-0104, Don A. Ostler.

**Comment No. 1:** "We suggest that best management practices (BMPs) be in place before, during and after any vegetative treatment that may cause degradation of water quality."

**Response:** Each state BLM office as well as state water quality regulators have specific on-the-ground procedures for the review of various plans. Some states will require the BLM to have each project reviewed that might impact water quality. Many of the agreements between BLM and state water quality regulators are being developed at this time. The BMP concept will likely be utilized in most if not all state/BLM agreements. The detail from these agreements will have to be accommodated at the state and local level. The responses under the Tiering section review some of the hierarchy within the BLM's planning process and points out avenues that state agencies and the public can use for input into the project-specific process.

### UT-0104.

**Comment No. 2:** "We suggest that measures need to be taken to protect the riparian habitat in all areas where it may be affected. Riparian areas not only provide habitat for varieties of wildlife, they also provide stream bank stability and a buffer for water quality degradation."

**Response:** Discussion of riparian issues has been expanded in Chapter 1 and throughout the document where appropriate.

### UT-0104.

**Comment No. 3:** "We suggest water quality monitoring above and below installed BMPs to document effectiveness and where BMPs are shown not effective that they are altered until proven effective."

**Response:** Monitoring is an important consideration and generally covered in the Implementation Section under Monitoring. BMPs and other mitigating measures related to water quality will require monitoring according to this section. Specific monitoring attributes will be determined at the site specific level and is usually in coordination with the state water quality regulator. The BLM intends to use a "feedback loop" process of evaluating BMPs and implementing more effective BMPs where necessary.

### NM-0105, Gregory D. Rawlings.

**Comment:** "I would also be interested in knowing the special management practices for Areas of Critical Environmental Concern and Wilderness Study Areas."

**Response:** Special management practices for designated Areas of Critical Environmental Concern (ACECs) are identified in approved Resource Management Plans, which outline general management practices and uses as well as mitigating measures required to protect designated ACECs. Detailed or expanded special management practices may also be prescribed in management or activity plans which may subsequently be prepared after formal designation of ACECs. Special management practices for Wilderness Study Areas are described in the Bureau's Interim Management Policy and Guidelines For Lands Under Wilderness Review (Update Document H-8550-1 dated 11/10/87), a copy of which may be obtained from any BLM office. See also, pages 1-24, 1-25, 3-62, and 3-63 of the Draft EIS.

### NM-0106, Jim Platt.

**Comment No. 1:** "Project specific information will be necessary to determine possible impacts. BLM recognizes this in the EIS, they should explicitly state that all projects conducted under the program must meet State water quality standards as well as other State regulatory requirements. Other comments are relative to herbicides, sediment and State of New Mexico water quality standards."

**Response:** See responses to UT-0239, and UT-0104.

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### NM-0106.

**Comment No. 2:** "In this EIS, BLM several times makes the comment that increased sedimentation of surface waters due to vegetation treatments will have short term effects. BLM should note in this EIS that all activities carried out must be consistent with State nonpoint source management programs developed pursuant to the federal Clean Water Act. In New Mexico, protection of water quality will be required so that short term violations of standards do not occur."

**Response:** Short term increases of sediment in surface waters due to vegetation treatments does not imply that state water quality standards will be violated. BLM compliance with individual state water quality standards will be adhered to as stated on page 1-29, paragraph 8 and page 1-30, paragraph 10 of the Draft EIS.

### AZ-0107, Ronald L. Miller.

**Comment No. 1:** The comments are concerned with water quality. "ADEQ therefore requests that the Bureau of Land Management submit to the Department, site specific plans for any vegetation treatment in Arizona for CWA Section 401(a) certification review."

**Response:** See responses to UT-0239, and UT-0104.

### AZ-0107.

**Comment No. 2:** "Water quality concerns should be examined at the project specific level. State agencies for the enforcement of water quality should be contacted. Best Management Practices (BMP) should be used."

**Response:** See response to UT-0104.

### AZ-0107.

**Comment No. 3:** "The Arizona Department of Environmental Quality, (ADEQ) has reviewed the Draft Environmental Impact Statement on Vegetation Treatment on BLM Lands and concluded that all alternatives represent significant potentials for unacceptable impacts to both Water and Air Quality."

**Response:** The DEIS states on Page 1-30 (State and Local Governments) "The act [FLPMA] also requires BLM to provide for compliance with applicable pollution control laws, including State and Federal air and water pollution standards or implementation plans." On Page 3-30 (Impacts on Air Quality), the

DEIS states "Federal, State, and local air quality regulations would not be violated." Specifically, if compliance with Federal and Arizona air quality regulations still represent unacceptable air quality impacts, the Bureau will assist in development of new State regulations.

### AZ-0108, Ivan J. Shields.

**Comment No. 1:** "7. Chemical applications: All chemical applications must be done in compliance with Arizona law. This may include obtaining Special Local Need registrations and meeting Arizona requirements as far as spraying chemicals in such a way as to avoid drift and contamination of crops, animals or people."

**Response:** See response to AZ-0107, Comment No. 3.

### AZ-0108.

**Comment No. 2:** "Cultural resources need to be addressed in project specific environmental analyses."

**Response:** See response to WY-0085.

### DE-0110, Martin J. Reid.

**Comment:** "The section titled 'Program Areas' the reasons for vegetation control along right-of-ways, including railroads, are listed. These reasons include the need to eliminate vegetation which 'restricts vision' or that 'presents a safety or fire hazard.' I would like to suggest that vegetation control is a critical part of safe railroad operations and is important for many more reasons."

**Response:** See revised text in Chapter 1, Right-of-Way Treatments. We acknowledge the importance of vegetation control and importance of chemical vegetation control on railroad rights-of-way.

### MT-0112, David Schwab.

**Comment No. 1:** "Native American religious and cultural concerns are not being addressed in the EIS."

**Response:** The Cultural Resources sections of Chapters 1, 2, and 3 have been revised to clarify the BLM's recognition of the need to deal with Native American concerns. In addition, these concerns will be addressed in project specific environmental analysis and appropriate documentation, in a manner consistent with BLM manuals.



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### MT-0112.

**Comment No. 2:** "Does BLM intend to address the issue of herbicide application impacts on traditional plant collection activities by Native Americans?"

**Response:** Tables E5-3 to E5-15 present exposure scenarios for members of the public. Table E4-1 has been revised to include Native American gatherers.

### OK-0113, Robert L. Brooks.

**Comment No. 1:** "Native American religious and cultural concerns are not being addressed in the EIS."

**Response:** See response to MT-0112, Comment No. 1.

### OK-0113.

**Comment No. 2:** "Cultural resources need to be addressed in project specific environmental analyses."

**Response:** See response to WY-0085.

### UT-0114, Peter Hovingh.

**Comment No. 1:** "Often one only looks at maps of distribution and states that no known species of T&E status occur in the region. Areas proposed for treatment should have at least a full year announcements [sic] together with some funding for biological surveys. Plants in arid regions may be dormant for many years but come out of the ground during a triggering rainstorm or after a triggering fire. Likewise plants of special status are often highly seasonal and one survey of the land is not adequate."

**Response:** Determination of presence or absence of special status species in a proposed project area is part of the environmental analysis process. Where distribution maps, previous inventory, known habitat affinities, or new information obtained from other agencies indicate a high probability that T&E species may be present in a proposed project area, an actual site examination is normally conducted. If a species is cryptic because it is an annual or for some other reason, this must be accounted for in the environmental analysis process. It is the responsibility of the botanist, wildlife biologist, or T&E coordinator to conduct a field survey at such time that the species can be properly identified, and a proposed project can be delayed until proper field survey has provided assurance of presence or absence of special

status species. The environmental analysis process is not complete until special status species concerns have been satisfied, and a project is not undertaken without finalized environmental documentation.

### UT-0114.

**Comment No. 2:** "Page 2-42 and 2-48: References to amphibian abundance are misleading."

**Response:** The discussions of aquatic species and invertebrates in the final EIS have been revised. Refer to Chapters 2 and 3.

### UT-0114.

**Comment No. 3:** "Some of the herbicides are clearly highly destructive to aquatic organisms. It seems that these herbicides should not be included in treatments even if barriers to use on aquatic systems occurs."

**Response:** Mitigation has been expanded to strengthen the protection of riparian and aquatic areas (Chapter 1). Buffer zones are required in the BLM's Chemical Pest Control Handbook, H-9011-1, which regulates our use of herbicides. The use of helicopters and maximum spray control nozzles should assure a greater degree of control of the specific applications. In ground applications the degree of control is much greater. A list of herbicides to be avoided in aquatic impact situations has also been added. The required buffers and the use of the least toxic herbicide will minimize the potential impacts of herbicide spraying on aquatic systems.

### CO-0115, Paul Hendricks.

**Comment No. 1:** "We further doubt the wisdom of unleashing a 'Vegetation Treatment' plan in the third year of an extreme drought. If you kill the vegetation and don't reseed you'll surely have a potential dust bowl. Re-vegetating in a drought period is also of questionable wisdom."

**Response:** Page 1-4 of the DEIS states "Future environmental analyses of vegetation treatment will be conducted at the project level and will focus on resources that are unique to specific sites, as necessary." Site-specific climatic conditions will need to be evaluated to determine both the proper method of vegetation treatment (if any), compliance with mitigation requirements, and to design reclamation (revegetation) plans.

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**CO-0115.**

**Comment No. 2:** "...detergents kill bees. Beekeepers have observed that surfactants used to dilute herbicides kill bees, especially when sprayed onto water from which bees drink."

**Response:** Mitigation has been added requiring notification of managed apiaries in the vicinity prior to application of herbicides.

**WY-0117, Wally D. Ramsbottom.**

**Comment:** "Insects can be introduced to control undesirable plants."

**Response:** It is agreed that insects can be introduced as a biological control agent. However, at the present time there are a limited number of insect species that are available as a biological control agent on a limited number of noxious weeds or targeted plant species. See Appendix C2, 3 and 4 for the latest list of biological control agents that have been approved for release in specific states. Also, see the Northwest Area Noxious Weed Control Program (NANWCP) FEIS, 1985 for the list of biological control agents that were available at that time. Biological control agents will be released on specific noxious weeds or targeted plant species as they become available for release. A person must remember that biological control agents are just one of methods of control of weeds in the overall noxious weed management program. It takes a combination of all methods of control in order to have a successful weed management program.

It is agreed that different animals have different foraging preferences of plant species. This is one of the methods of vegetation treatment and noxious weed control that is being proposed in this EIS, such as in Alternatives Numbers 1 thru 4. This was also addressed in the NANWCP FEIS that was approved for use in 1987. Alternative number 1 is the most integrated plant management program of all in the EIS.

**AZ-0118, Thomas W. Spalding.**

**Comment No. 1:** "Our department is especially concerned with the possible adverse impacts that application of amitrole, atrazine, bromacil, clopyralid, dicamba, diuron, tebuthiuron, triclopyr, and 2,4-D would have on terrestrial and aquatic wildlife populations. The monitoring commitment under the proposed action also needs to be very strong, both for the BLM and other agencies using aerial herbicides."

**Response:** We share your concern of the use of several of the herbicides in important wildlife habitats. We have added some specific mitigation (Chapter 1); including a statement that amitrole and dalapon are no longer proposed for use, and the use of atrazine, clopyralid, diuron, simazine, triclopyr (butoxyethyl ester only), 2,4-D, or diesel oil carriers adjacent to aquatic habitats will be carefully regulated; more discussion of the potential impacts; and a need to monitor the specific impacts of treatments in habitats where little information is available. It is our intent to minimize the unexpected adverse impacts under all treatment methods and alternatives.

**AZ-0118.**

**Comment No. 2:** "We question the assessment in the DEIS that the proposed action will have no significant impact on fish, and that adverse impacts to wildlife would be temporary and localized (page 1-27)."

**Response:** See response to MT-0095, Comment No. 2.

**AZ-0118.**

**Comment No. 3:** "Timing recommendations should be considered prior to any hunting season which is scheduled to occur in a treatment area to ensure that hunters do not ingest unmetabolized herbicides."

**Response:** Mitigation has been added to post areas treated with herbicides to warn hunters about game taken within or near the treated area (Chapter 1), and mentioned again in Chapter 3.

**AZ-0118.**

**Comment No. 4:** "The DEIS presents salt cedar as a noxious plant to be eradicated at all costs. Aerial herbicide control of salt cedar could have tremendous adverse impact to a vast array of wildlife species."

**Response:** We did not clearly state our intentions in treating saltcedar in the draft EIS. Our proposals are for mowing and cutting small areas of saltcedar and treating individual stumps with herbicide applied with a paint brush. There are no proposals to aerially spray saltcedar.

**AZ-0118.**

**Comment No. 5:** "The general monitoring guidelines for vegetation treatments (p. 1-25) should be given

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much greater emphasis. Monitoring is critical to the determination of whether objectives have been met and the effectiveness of the prescribed treatment."

**Response:** The section has been revised to reflect this suggestion.

**AZ-0118.**

**Comment No. 6:** "Many of the comments are specific to ground-water quality concerns and the lack of information in the DEIS."

**Response:** See responses to UT-0239, and UT-0104.

**AZ-0118.**

**Comment No. 7:** "...there should be some discussion of the cumulative effect of long-term use of herbicides as proposed in Alternative 1."

**Response:** See Appendix E8-1 for a discussion of bioaccumulation.

**AZ-0118.**

**Comment No. 8:** "...timing recommendations should be considered prior to any hunting season which is scheduled to occur in a treatment area to ensure that hunters do not ingest unmetabolized herbicides."

**Response:** See the revised table E4-1 which now includes Native Americans and would include hunters.

**ID-0120, Jay E. Anderson.**

**Comment No. 1:** "A summarization of a contemporary view of vegetation and vegetation dynamics is needed. People need to know what vegetation is (i.e. understand the nature of plant communities) and how it changes in response to climate and disturbance."

**Response:** Such a discussion has been incorporated into the introduction to the descriptions of the vegetation analysis regions in Chapter 2.

**ID-0120.**

**Comment No. 2:** "The document should specifically address the kinds of species and species mixes that will be used in rehabilitation seedings, not to the point of specifying species or mixes, but to provide general guidelines. We seem to have progressed

beyond the point of creating vast monocultures of crested wheatgrass in many districts, but managers need to be reminded that such practices are not acceptable."

**Response:** General guidelines for selecting seeding mixtures have been incorporated into Chapter 1 in the Standard Operating Procedures section.

**ID-0120.**

**Comment No. 3:** "The document should specifically address the widespread concern throughout the Great Basin and Snake River country about the loss of native shrub-steppe habitat. Protection of existing stands of sagebrush steppe is of grave concern to managers in Idaho, Utah, and Nevada, and that concern certainly should be reflected in this EIS."

**Response:** The sagebrush vegetation analysis region description in Chapter 2 has been revised to incorporate this concern.

**ID-0120.**

**Comment No. 4:** "I fail to see how Alternative 2 would result in 'less improvement on species diversity.' Widespread application of herbicides will almost certainly result in a decrease in species richness."

**Response:** This conclusion is based on results achieved by the end of the time period covered by the EIS, as opposed to results in the near term after treatment, and reflects both less treated acreage in Alternative 2 and certain opportunities foregone, such as treatments which help restore perennial vegetation to cheatgrass areas.

**DC-0123, Richard E. Sanderson.**

**Comment No. 1:** "While most of the important environmental consequences of the program have been addressed in the DEIS, EPA believes that the final document should more fully describe how site-specific environmental assessments will be made and should include more information on the pesticides proposed for use in the program."

**Response:** Site-specific analysis will be prepared at field levels (usually Resource Area and/or District Offices) in conformance with BLM NEPA Policy Handbook (H-1790-1) which describes standard format and structure to comply with all federal guidelines for NEPA compliance. See revision to Chapter 1 dealing with this subject. Information on how herbicides will be used is provided in Chapter 1, i.e., text changes in Weed Management Treatment (BLM Manual 9011) and Design Features.



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### DC-0123.

**Comment No. 2:** "To better describe the environmental impacts of the program, the FEIS should also include more detail on the environmental fate and transport of the 19 herbicides proposed for use in the program."

**Response:** The text in Chapters 1 and 3 have been revised.

### DC-0123.

**Comment No. 3:** "Clarification of information concerning pesticide use and correction of factual deficiencies should be included in the FEIS. Our attached detailed comments address these two areas."

**Response:** BLM has reexamined the risk assessment and examined additional data for amitrole, and has determined that amitrole is no longer considered for proposed use in this document. Amitrole will be deleted in the Record of Decision. Since drafting this document, producers are no longer manufacturing dalapon formulations registered for proposed use. Therefore, dalapon is no longer considered for use. The simazine summary in Chapter 1 has been revised. See Chapter 3 and Appendix E revisions.

### DC-0123.

**Comment No. 4:** "Factual deficiencies concerning various herbicides are provided in detail."

**Response:** The text in Chapter 3 and Appendix E5 has been revised, in particular regarding changes resulting in risk assessment for atrazine and simazine as discussed further below.

### DC-0123.

**Comment No. 5:** "The DEIS reports that exposure to the carriers in herbicide formulations is highly toxic to bird eggs without mentioning what mitigating steps are available to minimize this hazard."

**Response:** Mitigation has been added to protect bird eggs during the nesting season (Chapter 1).

### DC-0123.

**Comment No. 6:** "Table E4-9, maximum application rate for simazine is 10 pounds active ingredient per acre."

**Response:** Table E4-9 has been changed to reflect 10 pounds for simazine used on oil and gas sites and

on rights-of-way. The Appendix E5 text has been revised in many places to reflect the new margin of safety (MOS) for simazine at these sites.

### DC-0123.

**Comment No. 7:** "Page E3-38 of the DEIS, atrazine NOEL should be changed from 15 ppm to 150 ppm for systemic."

**Response:** The statement "and is the systemic NOEL used in this risk assessment" has been deleted from the text. The following statement has been added to the text: "A more recent 1-year dog study where animals were fed dietary levels up to 1,000 ppm, a NOEL of 150 ppm (5 mg/kg/day) was reported based on cardiac effects. Therefore, the systemic NOEL used in this risk assessment is 150 ppm (EPA 1989)."

### DC-0123.

**Comment No. 8:** "Page E3-40, concerns atrazine data gaps."

**Response:** The text has been revised to read, "EPA will soon issue a data call-in letter identifying a number of data gaps, among them mutagenicity assays." Numerous tables in Chapter 3 as well as Appendix E5 have also been revised to reflect changes. Figure 3-4 was changed to show 5 mg/kg/day for atrazine.

### DC-0123.

**Comment No. 9:** "The Aquatic Exposure Estimate section should use a 6-inch pond depth exposure level to determine environmental concentrations."

**Response:** The consensus was that a 1-foot pond would be the best representative depth and therefore, the text has been modified. See Appendix E7 and E8 changes.

### ID-0126, Jerry M. Conley.

**Comment No. 1:** "Primary and secondary effects of herbicides on the large majority of wildlife species are inadequately known, but we do know that such secondary effects as loss of sagebrush due to herbicide treatment can be detrimental to such sagebrush-dependent species as sage grouse and pronghorn antelope."

**Response:** The potential impacts to sage grouse and other wildlife from removal of sagebrush had been addressed in the draft, but has been strengthened and further mitigated in the final EIS (Chapter 1).



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**ID-0126.**

**Comment No. 2:** "The EIS does not mention the obvious treatment of reduction or elimination of livestock grazing which would allow seral development that will control undesirable plant species."

**Response:** While it is true a stable climax or disclimax plant community would have significantly reduced frequencies of many undesirable species, once many of these plants are introduced their highly competitive nature soon replaces the native climax plants. While grazing does not occur in many highway rights-of-ways or railroad rights-of-ways, these areas have some of the more significant noxious weed problems simply due to the competitive nature of the weedy species.

The encroachment of pinyon Juniper into native sagebrush range can occur regardless of grazing and eventually develops into a closed canopy crowding out all understory vegetation. Unless wildfire or prescribed burning occurs, mechanical treatment is necessary if big game habitat is to be maintained. Many of the state agencies responsible for wildlife management, have participated in land treatments, in cooperation with BLM, for the benefit of wildlife.

**ID-0126.**

**Comment No. 3:** "A stable climax or disclimax plant community would have significantly reduced frequencies of many such species [like death camas or larkspur]; one reason they are common on many ranges now is that livestock won't eat them and, if the goal of BLM management was not solely designed to increase livestock forage, control would not be necessary."

**Response:** Even with good animal husbandry, livestock losses occur from localized proliferation of these plants in specific locations. In areas where losses continue and livestock use is a legitimate use of those areas under the land use plan, treatments may be proposed to speed the rehabilitation process and decrease animal losses. Treatment is a short-term solution that must be combined with good grazing management to achieve reduced frequencies of these species in the long-term.

**ID-0126.**

**Comment No. 4:** "The section relating to the effects of herbicides on aquatic systems in the DEIS is totally inadequate; specified water quality standards must be addressed in the DEIS."

**Response:** See responses to UT-0239, and UT-0104.

**NV-0129, John B. Walker.**

**Comment:** "Attached is an updated sensitive species list for your use."

**Response:** The most up-to-date information on listed and candidate species according to Fish and Wildlife Service was used for Appendix H.

**UT-0130, Jerry Schmidt.**

**Comment:** "Removing trees from the land hurts the Earth's ability to remove carbon from our atmosphere and contributes to the greenhouse effect, and I believe the BLM and all other land management agencies should be made to consider this factor in their decisions with regard to environmental analysis."

**Response:** All vegetation is important in the processing and recycling of oxygen and carbon through photosynthesis. By converting carbon dioxide into oxygen and plant fiber, carbon is "fixed;" removed from the atmosphere until the plant material either decomposes or burns. Global carbon dioxide and methane levels are increasing, and have been called "greenhouse gases," implying their increased concentrations may lead to global climate change. Although the "greenhouse effect" theory is very popular, the probability of its occurrence is unknown at this time. To validate the theory, a multi-year, multi-million dollar research program was established by President Bush, and is administered by the interagency Committee on Earth Sciences. The Bureau of Land Management is a participating agency in this research.

Although grassland may fix carbon at a faster rate than a pinyon/juniper forest, the total mass of fixed carbon is much less (nearly one tenth.) One acre of pinyon/juniper forest (assuming 5 tons/acre of cellulose -  $C_6H_{10}O_5$ ) consists of nearly 2.2 tons fixed carbon, which if burned completely, would form 8 tons of carbon dioxide. This is comparable to burning 880 gallons of gasoline (represented as 6 pounds per gallon heptane -  $C_7H_{16}$ ). World-wide carbon dioxide emissions (1990) are estimated to be nearly 28 billion tons per year (Stern, A. C. 1976. Air Pollution: Third Edition, Volume 1 - Air Pollutants, Their Transformation and Transport. New York: Academic Press).

**UT-0139, James Wheeler.**

**Comment No. 1:** "Page 6 of the executive summary contains a reference to poisonous plants involved with recreation and visual resources. What plant species harmful to people are to be controlled? Death

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Camas is a naturally occurring species that should not be eliminated just because it is harmful to people. Plants poisonous to livestock should not be a problem in recreation areas for people."

**Response:** As discussed on page 3-59 of the DEIS, certain plants can be harmful to people and may be controlled on certain sites, such as campgrounds and trails, where there is high probability that visitors will be exposed to injury or illness from thorns, burrs, skin irritants, or poisonous plants. Examples of species which might be controlled for these reasons include Canada thistle, Mexican cocklebur, puncture vine, poison ivy, and poison hemlock. Death camas is not normally a problem to recreationists, but poison hemlock can be deadly.

### UT-0139.

**Comment No. 2:** "Cultural resources need to be addressed in project specific environmental analyses."

**Response:** See response to WY-0085.

### OR-0163, J-M Michelsen.

**Comment No. 1:** "With the increasing aridity of the Southwest, this is not the time to be disturbing vegetation."

**Response:** See response to CO-0115, Comment No. 1.

### OR-0163.

**Comment No. 2:** "The DEIS also needs to pay more attention to the legislative mandates in the Clean Air and Clean [Water] Acts. There are a [number] of specifically and strictly protected areas within the 13 states covered by the DEIS and these need to be addressed."

**Response:** The Bureau clearly intends to comply with these air quality regulations, including designated Prevention of Significant Deterioration Class I and nonattainment areas (as described on Pages 2-21 through 2-25 in the DEIS). The Bureau has a long history of cooperating with the National Park Service and the U.S. Environmental Protection Agency concerning air resource management. The Bureau also actively participates on the Western States Air Resource Council, an association of state air regulatory agencies and Federal land management agencies.

### UT-0176, Owen Severance.

**Comment No. 1:** "The draft EIS also does not address the release of CO<sub>2</sub> and its contribution to global warming that will occur from burning hundreds of thousands of acres of mature pinyon/juniper."

**Response:** See response to UT-0130.

### UT-0176

**Comment No. 2:** "The EIS should also require new VRM data for each project since recreational use of BLM land is rapidly increasing along with the public's concern about visual quality."

**Response:** If Visual Resource Management (VRM) site specific project data is outdated, inadequate, or nonexistent, a BLM manager may order an updated or new VRM inventory prior to preparation of the Visual Contrast Rating for the particular project.

**UT-0176 Comment No. 3:** "Cultural resources need to be addressed in project specific environmental analyses."

**Response:** See response to WY-0085.

### AZ-0182, Stephen M. Williams.

**Comment:** "On page 1-1 and 1-6 Appendix I, Target Plant Species, is misidentified as Appendix H. Appendix H is Special Status Species list."

**Response:** Correction has been made.

### ID-0187, Glen W. Shewmaker.

**Comment:** "Concerning oral LD<sub>50</sub> in rats (figure 3-3; it would be good to compare common household toxicants on the same chart, eg: table salt, alcohol, gasoline, chlorox, cigarette smoke, aspirin, vitamin supplements."

**Response:** A risk of death comparison is on page E5-4 of the DEIS. Since the health risks for the BLM program are based on more factors than LD<sub>50</sub>, the value of a chart as suggested is not apparent.

### NV-0197, William A. Molini.

**Comment No. 1:** "Evidence suggests and we believe that a major factor in the long term decline of sage

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grouse in the west has been caused by vegetal treatments."

**Response:** The discussion of potential impacts of treatment of sagebrush on sage grouse has been revised in the final. Mitigation has been added (Chapter 1) and the discussion in the impacts analysis (Chapter 3) have been expanded.

### NV-0197.

**Comment No. 2:** "It would be interesting to know just how many of the 372,000 acres proposed to be treated annually are actually targeted to benefit commodity land uses."

**Response:** Almost all of the 372,000 acres of proposed treatment will directly or indirectly benefit commodity land uses through reduction or elimination of noxious weeds, increases in forage quantity and quality, improved water quality and reduction of fire hazards. Likewise, mitigation will normally benefit big game animals through improved forage diversity.

### NV-0197.

**Comment No. 3:** Sagebrush also serves as important thermal cover for big game species. In areas of limited rainfall and forage production the thermal cover provided by sagebrush may be critical to deer survival.

**Response:** The stated concern has been addressed in the Final EIS in Chapters 2 and 3.

### NV-0197.

**Comment No. 4:** "The discussion of mechanical methods of treatment for the sagebrush type tends to understate the damage to desirable shrubs. Our observation has been that desirable shrubs are nearly always severely damaged or eliminated by plowing."

**Response:** Degree of impact on desired plant species will be evaluated in site specific analyses to insure adequate protection for key species affected by treatment. In cases where only partial eradication of a shrub is desired, options in treatment design can be planned to achieve desired effects.

### AZ-0203, Dennis W. Sundie.

**Comment:** "Patterns identified in the legend for the Columbia Lava Plateau and Glaciated Central

Region are reversed from that depicted in the map. (Figure 2-7, page 2-32.)"

**Response:** Figure 2-7 has been corrected.

### MT-0205, James Phelps.

**Comment No. 1:** "Nothing affects species diversity like vegetative manipulation. Are there any studies showing the results of this? Are there studies that show species diversity is increased by vegetative manipulation? In our experience, such actions tend towards monocultures, or at least in the direction away from species diversity."

**Response:** The effects of vegetation treatment on diversity of the treatment site depends on many different factors, including kind of site, site conditions and diversity prior to treatment, how soon after treatment a treatment applied, and when and how treatment is applied. Creation of a monoculture of any kind is not a viable treatment objective, and the best technical knowledge we have goes into treatment design to avoid such a result. We cannot categorically address the effects of vegetation treatment on species diversity. Ecological responses and principles are discussed for all treatment methods in Chapter 3, Part 1 of the DEIS in relation to vegetation (pages 3-5 through 3-29) and relation to fish and wildlife on pages 3-46 through 3-58. As the discussions reveal, some things are enhanced by treatment, others are not. In general, some variety of species and plant lifeforms will most likely be the treatment objective for multiple-uses on a site proposed for treatment, and practices which do not essentially maintain or enhance pre-treatment diversity are not likely to meet multiple-use objectives. Treatment effects on diversity are also discussed earlier in this chapter in Common Concerns and Responses (page 4-12).

### MT-0208, Phil Johnson.

**Comment No. 1:** "The BLM is advised to check with the appropriate state pesticide-licensing agency to be assured that herbicides intended for use in a particular state are indeed registered for that year. The BLM should also be cognizant of the labeling restrictions dealing with "non-cropland," "rangeland" and "pastureland." Each are unique terms with regard to labeled application sites."

**Response:** The BLM is aware that pesticide registration and labeling restrictions can vary between individual states. During the site specific analysis and preliminary planning of weed management programs pesticide registration and current labeling restrictions will be checked to ensure that only approved herbicides will be used and no label res-



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trictions will be violated. Refer to the Standard Operating Procedures section of Chapter 1.

### MT-0208.

**Comment No. 2:** "The discussion on the use of grazing animals as an effective biological control measure should be expanded."

**Response:** See revised text, Chapter 1, Biological section on the use of grazing animals as an effective biological control measure.

When considering the use of grazing animals as an effective biological control measure the following factors are taken into consideration: target plant species present, other plant species present, stage of growth of both target and other plant species, palatability of all plant species present, selectivity of all plant species present, type of management program that is logical and realistic for the specific treatment site, grazing animal species that is being considered and the availability of that grazing animal within the treatment site area. These factors will be some of the options taken when developing the individual treatment for a specific site.

The discussion of past land management practices has been addressed in Grazing Allotment Management Plans, and Resource Management Plans.

### DC-0210, James W. Stewart.

**Comment:** "The Clean Air Act Section 169A and subsequent Environmental Protection Agency regulatory requirements should be discussed, particularly because of their significance regarding Class I areas, the vast majority of which are located in those 13 Western States. Coordination with adjacent National Park Service (NPS) units where visibility is an important value, especially during periods of high visitation, should be discussed in the final EIS."

**Response:** See response to OR-0163, Comment No. 2.

### UT-0218, Ted Lee.

**Comment:** "Biological control of weeds can be done by using pathogens, insects, and livestock. More emphasis needs to be placed on these control methods."

**Response:** Please refer to responses to letters WY-0117, and MT-208, Comment No. 2.

### NM-0226, Roger S. Peterson.

**Comment:** "We object to the EIS's use of 'infesting' in connection with this [sand shinnery] oak on p. 3-109."

**Response:** Text has been revised.

### CO-0227, Roger Flynn.

**Comment No. 1:** "Objective of the EIS involves human manipulation of the environment as opposed to keeping the land in its "natural condition" which we hardly find as consistent with the intent of FLPMA."

**Response:** The Federal Land Management and Policy Act does not mandate that all lands be managed in a natural condition. Section 102 of the act states "the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air, and atmospheric, water resources, and archaeological values; that where appropriate, will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use." Letting nature take its own course does not always provide the desired plant community. Many introduced noxious weeds, even though non-poisonous, are very competitive in nature and crowd out desired vegetation.

### CO-0227.

**Comment No. 2:** "Again, we find conflict with the goals of FLPMA and the BLM's actions. The DEIS does not include a "complete and current" inventory of all sensitive, threatened, rare and endangered species located within the scope of this project."

**Response:** Proposed treatments in this document are also covered within Land Use Plans and supporting documentation; also site-specific analyses will be prepared on projects. These two documents will more specifically address the threatened, endangered, and candidate species occurring within the proposed treatment areas. Prior to implementation of any of these proposed treatments, an analysis of impacts to all special status species will occur within the two levels of the more specific environmental analysis documents mentioned above.

### CO-0227.

**Comment No. 3:** "What is the chance that each [special status] species will be subject to each of the var-



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ious vegetative treatments (mechanical, chemical, etc.)? And what are the effects of all the treatments on all of the special status plants?"

**Response:** Chapter 3 impact discussion has been revised to clarify the level of impact to special status species.

### CO-0227.

**Comment No. 4:** "The goal to 'create stratified age structure dynamics in rangeland' (DEIS 1-6), will probably not be met by interrupting ecological succession."

**Response:** Prescribed fire is sometimes used in mature or decadent oak or chaparral shrublands to consume older material and stimulate new growth that is more accessible to wildlife. Such treatments create multi-aged mosaics and better resemble conditions under natural fire regimes. In forest or woodland types it is also possible to selectively treat stands or individuals to achieve an uneven-aged situation. Any treatment that opens an even-aged stand and provides an opportunity for a pulse of regeneration can eventually create stratified age structure in a variety of vegetation communities.

### CO-0227.

**Comment No. 5:** "The DEIS makes no mention of the parasitic relationship of *Castilleja* to other organisms. What effect will this have on its parasitic partners?"

**Response:** The effect of herbicides on "parasitic partners" will vary depending on their susceptibility to the specific herbicide. During the site specific evaluation non-target species, whether they are "parasitic partner" or not, will be considered as to the method of control. If the use of an herbicide is selected as a method of control, the specific herbicide selected will depend upon the susceptibility of both the target and nontarget plants present.

### CO-0227.

**Comment No. 6:** "In light of all the recent discoveries about the rate at which old growth vegetation is being systematically removed, it is with great alarm that we note the BLM's failure to consider this aspect of pinyon-juniper and creosote communities."

**Response:** The potential value of retaining old growth pinyon-juniper forests as wildlife habitats has been described in Chapter 2, and considered in Chapter 3 in the impact analysis discussions of the final EIS.

### CO-0227.

**Comment No. 7:** "We assert that the "wildlife" increase will be largely game species. We do not consider game ungulates to be an adequate indicator of the overall health of wildlife."

**Response:** As discussed in response to NM-0038, all wildlife species will be considered during the site-specific analysis level.

### CO-0227.

**Comment No. 8:** "The preferred alternative calls for intensive chemical treatment and therefore is not a plan for increasing wildlife habitat in the pinyon-juniper zones in contradiction to DEIS page 3-56."

**Response:** The evaluation process on individual treatments includes the consideration of the site-specific resources and a balancing of resource allocations that will occur as a result of the treatment. Multiple-use management is in essence the management of allocations, as nothing is done without some affect on the balance of the biotic community. The application of vegetation treatments acknowledges the use allocation philosophy and as indicated in the above response, the end product is judged to be more beneficial than the losses from the previous community.

### CO-0227.

**Comment No. 9:** "The DEIS fails to adequately discuss the effect this treatment will have on the endangered peregrine falcons that inhabit the canyonlands of southern Utah."

**Response:** The primary prey species for the Canyonlands population of peregrine falcons should be the riparian and aquatic related avian species, and the cliff related swallow and swift populations. The mitigation added in Chapter 1 add further protection to riparian and aquatic habitats, and nesting birds, reducing the potential for significant adverse impacts. More specific potential impacts will be addressed in the site-specific environmental analyses.

### CO-0227.

**Comment No. 10:** "The first basic inadequacy of this programmatic DEIS involves its overbroad lack of specificity which avoids the close scrutiny necessary when evaluating the environmental impacts of program implementation in specific areas."

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**Response:** This EIS meets requirements under FLPMA and NEPA. Please see section in Chapter 1 entitled, Legal Mandates for the Program and NEPA Requirements of the Program. In addition, responses to concerns expressed on cumulative analysis and alternatives were provided in the general issues earlier in this chapter.

**ID-0229.**

**Al E. Murrey.**

**Comment No. 1:** "The DEIS does not fully address impacts of biological methods of vegetation manipulation to water quality. Grazing of cattle and sheep is a major method of biological manipulation..."

**Response:** See response to UT-0239.

**ID-0229.**

**Comment No. 2:** "Many of the comments are specific to ground-water quality concerns and the lack of information in the DEIS."

**Response:** See responses to UT-0239, and UT-0104.

**ID-0230, Janet O'Crowley.**

**Comment No. 1:** "Exec-5, 'Fish and wildlife.' The statement 'Fishery resources are not likely to be significantly impacted under any of the treatment methods or alternatives' is inaccurate and inadequate in light of the fact that most of the herbicides proposed for use are toxic to macroinvertebrates (the primary food source for fish), fish, and other aquatic organisms."

**Response:** Exec-5, Fish and Wildlife has been rewritten to more clearly summarize the expected impacts, also see response to NM-0038, and Mitigation in Chapter 1.

**ID-0230.**

**Comment No. 2:** "Overall, alternative 1 would not necessarily have the most beneficial impact on wildlife especially in light of the proposed 4-fold increase in herbicide use on the public lands."

**Response:** Portions of the impacts to wildlife for Alternative 1 have been rewritten to reflect potential adverse impacts or to better clarify why the expected impacts could occur. (Also, see response to NM-0078.)

**ID-0230.**

**Comment No. 3:** "Page 3-10, Sagebrush: No discussion is provided describing how desired vegetative results would be achieved after mechanical treatment is complete."

**Response:** The summary of the Sagebrush section has been revised to clarify how desired vegetative results are achieved on sagebrush sites.

**ID-0230.**

**Comment No. 4:** "Aren't most of the herbicides proposed for use either carcinogenic or toxic to birds, mammals and macro-invertebrates?"

**Response:** Seven of the 19 herbicides are being assessed as if they were carcinogenic. These are amitrole, atrazine, bromacil, 2,4-D, glyphosate, picloram and simazine. BLM has reexamined the risk assessment and examined additional data on amitrole. BLM has determined that amitrole is no longer considered for proposed use in this document. Amitrole will be deleted in the Record of Decision. See Table E6-1 for a summary of acute toxicity to rats and mallards, and Tables E8-1 to E8-22 for a risk comparison of estimated wildlife doses from the various herbicides to toxicity references levels. It is acknowledged on page E8-3 of the Draft EIS (DEIS) that "local populations of small mammals, small birds, terrestrial amphibians, and reptiles may be adversely affected if large areas are treated."

**ID-0230.**

**Comment No. 5:** "What is the impact on insects and other natural pollinators?"

**Response:** Statements concerning the toxicity to bees and other insects are found on pages E6-1 to E6-13 of the DEIS as part of the Wildlife Hazard Analysis. There is no summary. Criteria for rating the risk assessment is found on page E6-1.

**NM-0232, George Grossman.**

**Comment No. 1:** Expressed concerns as to alternatives provided, rationale, and alteration of natural ecosystems.

**Response:** Please see revision for added emphasis of purpose and need section (Chapter 1), and Vegetation section in Chapter 2. Also see responses to UT-0079, ID-0120, MT-0205, UT-0253, and UT-0265.

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### NM-0232.

**Comment No. 2:** "Alternatives No. 1 and No. 5 include aerial spraying of herbicides. Especially with fixed-wing aircraft, this method tends to produce the large brush-free areas (rather than smaller-scale mosaics) that are worst for wildlife habitat."

**Response:** Statements have been added to the discussions of Alternatives 1, 2, and 4 indicating that aerial application of herbicides can cause significant adverse impacts to wildlife, and mitigation have been added to protect wildlife from some impacts from aerial application of herbicides.

### NM-0232.

**Comment No. 3:** "Where applicable, we feel that fire is the best treatment method available for invasive shrubs and noxious weeds. It is often suitable to rangeland invaded by mesquite; it usually allows a few older trees to survive, as they should for the sake of wildlife."

**Response:** Statements have been added to the discussion of Alternative 4 expressing similar concerns on behalf of the wildlife resource, and pointing out that this alternative also has the largest number of acres of aerial and total herbicide application.

### NM-0232.

**Comment No. 4:** "In any case, we oppose the use of herbicides that are (1) nonspecific or (2) long-lasting in the soil..." This comment indicates some concern for possible ground water contamination.

**Response:** See response to UT-0239.

### NM-0232.

**Comment No. 5:** "Why does BLM plan to use tebuthiuron which is toxic to mammals and has no place on public lands?"

**Response:** See response to ID-0230, and Table E8-18.

### OR-0233, Jan Wroncy.

**Comment No. 1:** "The Draft EIS does not consider obtaining informed consent from the members of the public who are assumed to be likely to receive some amount of exposure from pesticides, by-products, contaminants, pyrolytic or phytolytic

products, petroleum distillates, inerts, surfactants, smoke, fire ignitors and/or fire retardants that may be used in the vegetative management program."

"The Bureau of Land Management may be unaware of how much pesticides drift, leach, vaporize, generally move about, and persist, but the BLM certainly can not deny that the smoke (and any additional chemicals in it) created by the intentionally set fires on BLM lands does not travel off the site to other properties not belonging to the BLM. The members of the public, individually, need to be asked whether they will give their informed consent to such exposure and to the trespass onto their land."

**Response:** The DEIS states on Page 1-30 (State and Local Governments) "The act [FLPMA] also requires BLM to provide for compliance with applicable pollution control laws, including State and Federal air and water pollution standards or implementation plans." On Page 3-30 (Impacts on Air Quality), the DEIS states "Federal, State, and local air quality regulations would not be violated." The Bureau is subject to the same air pollution regulations as other federal agencies, industry, and private citizens. This does not include obtaining "individual...informed consent" of the public, but compliance with the laws created and enforced by elected and appointed officials representing the public.

### OR-0233.

**Comment No. 2:** "First of all there is not complete information given as to the full formulations of the pesticides, what their inerts are, what their breakdown products are, their pyrolytic or phytolytic products, what surfactants, spreader-stickers, activators or contaminants are in them, much less any health, environmental fate or impact information about them."

**Response:** See the DEIS page 1-31 for a discussion of the limitations of this document. The last paragraph reads, "The human health and nontarget species herbicide risk assessment was based on the most recent available information concerning herbicide toxicity and environmental fate properties." Also see response to OR-0238.

### OR-0233.

**Comment No. 3:** "It is increasingly recognized by the medical community that there are a rapidly growing number of chemically and smoke sensitive people."

**Response:** Please see Appendix E5-19 and 20 for Factors Affecting the Sensitivity of Individuals and Likelihood of Effects in Sensitive Individuals.

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### CO-0235, Julius Dahne.

**Comment No. 1:** "The DEIS is flawed because it relies upon outdated methods to determine the persistence of herbicides in the soil."

**Response:** Please see the last paragraphs on each chemical in Chapter 1, and text revisions on this topic in Chapter 3 impact section in the final EIS.

### CO-0235.

**Comment No. 2:** "However, there is no analysis of the risks posed by noxious weeds to balance the risks to human health against."

**Response:** See revised text in Chapter 1 for discussion of purpose and need and program objectives.

### CO-0235.

**Comment No. 3:** "...under typical conditions of rangeland treatments, and under typical conditions of public-domain forest land herbicide applications, 'members of the public may be at risk of systemic effects and an increased cancer risk from amitrole.'"

**Response:** BLM has reexamined the risk assessment and examined additional data. BLM has determined that amitrole is no longer considered for proposed use in this document. Amitrole will be deleted in the Record of Decision.

### CO-0237, Angela Medbery.

**Comment No. 1:** "I would expect to find different options applied successively on the same land for optimal management and expected to see some of those combinations discussed in the management plan. They were not in the DEIS."

**Response:** In regards to options for optimal management and management plans, these considerations are provided in Resource Management Plans, not in this EIS (see responses to common issues earlier in this chapter on this subject).

### CO-0237.

**Comment No. 2:** "Is there a particular density of a particular plant species in a specified use area that will trigger the need for a management plan to be implemented?"

**Response:** Yes, density of target plant species and a number of other factors are considered prior to

treatment. See text which has been revised to clarify this point in Chapter 1, Standard Operating Procedures section.

### CO-0237.

**Comment No. 3:** "Inert ingredients and surfactants can also cause various health related impacts."

**Response:** See response to OR-0238, Comment No. 9.

### CO-0237.

**Comment No. 4:** "One study...found leukemia risk in children 6.5 times greater if the parents used pesticides in the home and on the yard. How do BLM use risks further impact these kids?"

**Response:** See Appendix E5-18 for Synergistic Effects and E5-20 for Factors Affecting the Sensitivity of Individuals.

### CO-0237.

**Comment No. 5:** "Some people are very sensitive to pesticides and other chemicals."

**Response:** See Appendix E5-19 to 21 for Effects on Sensitive Individuals.

### OR-0238, Norma Grier.

**Comment No. 1:** "The DEIS does not address the causes and prevention of vegetation problems. The EIS never considers why the land and the vegetation is the condition it is...The least BLM needs to do is spell out where the causes of vegetation problems are addressed in BLM documents."

**Response:** The text has been revised in the Final EIS regarding historic vegetation conditions and factors that have contributed to present conditions in Chapter 2, Analysis Region Descriptions, Vegetation. Also, these factors are considered prior to treatment, and objectives and design developed in accordance with allotment management plans (AMPs) and resource management plans (RMPs). RMPs provide a categorization of all rangelands considered, based on present and past conditions.

### OR-0238.

**Comment No. 2:** "The document ignores concerns with groundwater contamination..." The letter



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offered several comments related to ground water, water quality, and drinking water standards.

**Response:** We agree. We have added additional emphasis to the use of ground water as a drinking water supply. See text for revised section. See response to UT-0239.

Two documents are useful for evaluating the potential of forestry pesticides to reach ground water. "Pesticides in Groundwater of the United States of America" was a survey of state lead agencies, prepared as part of NAPIAP, by the Oregon State University Extension Service. The 1988 update of the California Well Inventory Data Base includes some 40,000 samplings for Sept. 1, 1987 to June 30, 1988. Both represent primarily agricultural uses because of the high local frequency of use in agriculture and the very small fraction of total use ascribable to rangeland, even in the Northwest. Therefore, findings as a result of agricultural use are more likely

than would be the case following rangeland uses. In addition, agricultural uses are continuous, so that when used in an area that is a potential conduit to ground water, the "pipeline" concentration in the conduit is maintained. Intermittent or infrequent use as characterized by rangeland uses will permit dissipation before the material reaches an unacceptable location.

Ground water sampling is not usually done in a random manner. The great costs of analysis dictate that sampling will be directed; samples are usually taken only where there is reason to expect appearance of a pesticide in a water source. This means that surveys will be biased toward positive findings. Given the intensive character of agriculture, it is remarkable that so few detections are seen, and that so few of those approach an action level.

For the herbicides discussed in the comment, the OSU survey of state lead agencies responsible for water quality shows the following:

| Herbicide   | Number of Wells | ND   | Less than ppb             | Less than HA | Greater than HA |
|-------------|-----------------|------|---------------------------|--------------|-----------------|
| atrazine    | 5568            | 4798 | 17                        | 743          | 11              |
| bromacil    | 726             | 720  | —                         | 6            | —               |
| dalapon     | 14              | 14   | (only one state analyzed) |              |                 |
| dicamba     | 1239            | 1196 | 5                         | 38           | —               |
| diuron      | 998             | 976  | —                         | 22           | —               |
| hexazinone  | 198             | 197  | —                         | 1            | —               |
| picloram    | 1028            | 990  | 10                        | 28           | —               |
| simazine    | 2922            | 2819 | 3                         | 99           | 1               |
| tebuthiuron | 31              | 31   | (only one state analyzed) |              |                 |

ND = not detected

HA = EPA Health Advisory level

Imazapyr was not listed. It is relatively recent herbicide, with low application rates.

The California Well Inventory indicates a similar pattern. In this program wells with positive findings are often resampled for confirmation. The following data are presented as numbers of wells sampled and numbers positive. The report also indicates numbers of counties sampled against counties with positive findings. These latter data are not shown here.

| Herbicide   | Number of Wells                | Number of Negative | Number of Positive |
|-------------|--------------------------------|--------------------|--------------------|
| atrazine    | 319                            | 317                | 2                  |
| bromacil    | 186                            | 186                | 0                  |
| dalapon     | 2                              | 2                  | 0                  |
| dicamba     | 55                             | 55                 | 0                  |
| diuron      | 323                            | 23                 | 0                  |
| hexazinone  | no sampling during this period |                    |                    |
| picloram    | no sampling during this period |                    |                    |
| simazine    | 325                            | 324                | 1                  |
| tebuthiuron | no sampling during this period |                    |                    |

It seems highly unlikely that any rangeland use of herbicides represents a threat to ground water. This does not negate the need to pay close attention to use practices to assure protection of water sources.

**OR-0238.**

**Comment No. 3:** "No public agency should undertake programs that have any potential for contaminating groundwater..."

**Response:** See response to UT-0104.

**OR-0238.**

**Comment No. 4:** "BLM has assumed that picloram is carcinogenic for the EIS analysis."

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**Response:** BLM is purposely being highly conservative in assuming carcinogenicity of picloram. Conservatism is not out of place, but needs to be placed in context. The study by NCI from which the argument stems found benign liver nodules in female rats only, after a lifetime exposure to time-weighted average dietary concentrations of picloram of nearly 15,000 ppm. This translates to an average daily dose rate of about 750 mg/kg/day. The panel of NCI experts who evaluated the data identified picloram as a chemical for which evidence of carcinogenicity was at best equivocal. This finding was disputed by another pathologist acting independently, who stated that picloram was indeed a potent carcinogen. His opinion triggered a further evaluation, which agreed with the original assessment.

It is customary to assume for purposes of risk assessment that even equivocal data does represent a real effect. It is entirely proper, philosophical arguments by the respondent notwithstanding, to conduct a quantitative risk assessment on the basis of animal carcinogenesis data, whether definitive or equivocal. Such analyses are biased to conservatism and provide some sense of the upper level of risk that might be incurred by an exposed person. Other factors must be considered as well. The principal exposed population is occupational, for whom contact can be well controlled. Furthermore, skin absorption of picloram is lower than that of almost any other chemical, a fraction of one percent. The nature of picloram use in vegetation management is such that exposure of the general public through environmental routes following rangeland use is minimal to non-existent. The potential of herbicides as a class, including picloram, to reach ground water as a result of actual use has been addressed above. The theoretical consideration of picloram as a carcinogen is a starting point from which to then incorporate all of the real world factors that can influence impact, and such an examination does not indicate any reasonable probability of cancer risk.

### OR-0238.

**Comment No. 5:** "A quantitative human health risk assessment is morally repugnant and inappropriate as a decision making device or BLM."

**Response:** The option of using a quantitative risk assessment (QRA) in judging probability that a given exposure will result in adverse effect, particularly cancer, appears to be accompanied by two other options. Either a threshold based assessment can be used, as most other countries do, or it can be assumed that any amount of a chemical that is even equivocally active will cause cancer. While a threshold based approach is almost certainly correct biologically for many carcinogens, it is not yet

sufficiently established as a regulatory device. The second option is self-evidently flawed, because no chemical can be proven non-carcinogenic.

QRA is not a perfect system and will never be, but where human epidemiology and estimates from animal carcinogenicity assays can be compared, the two are not inconsistent. It is generally agreed that QRA overestimates cancer risk, which is appropriate. It is also widely conceded that the arbitrary hypothetical risk level of  $1 \times 10^{-6}$  deemed to be acceptable by regulatory agencies, is indeed virtually equivalent to zero.

Given that zero risk cannot be achieved in any context, and that zero risk demanded of any action that affects others logically demands zero risk of ALL actions that affect others, such a standard as one hypothetical case in a million lifetimes seems reasonable. There is no difference in principle between using a chemical that carries some finite probability of health effect, and using a wood stove. A stove is one of several alternatives for heating space, and even the best designs produce an array of carcinogens of high potency as well as other toxic materials that are distributed widely, imposing significant estimated risks on the surrounding community, as well as clinically observable disease. A large fraction of all risks are imposed by others, because even voluntary actions that carry risk are involuntary if any risk-bearing component of the action is not perfectly understood for the purpose of informed decision.

The idea of a "one in a million" cancer risk quite naturally brings forth the question, "what if I am the one?" The same question comes forth when discussing the idea that one molecule of a carcinogen will cause cancer. Those odds are on the order of one chance in 100 billion billion lifetimes, and the question is as valid in either case. Also, in either case, it is not possible to show that such a level truly represents a point below which risk does not exist.

### OR-0238.

**Comment No. 6:** "2,4-D would be used only as a last resort because of epidemiological evidence that phenoxy herbicides cause lung cancer, stomach cancer, Hodgkin's disease, non-Hodgkin's lymphoma, and soft tissue sarcoma in humans."

**Response:** With respect to the assertion that 2,4-D is a carcinogen, it is incorrect to state that there is epidemiological evidence that phenoxy herbicides cause "lung cancer, stomach cancer, Hodgkin's Disease, non-Hodgkin's lymphoma and soft tissue sarcoma in humans." Aside from the epidemiological evidence that no relation exists, which is no more reliable than that showing association, the data have been recently examined by two panels of scientists,

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one organized by the Canadian Center for Toxicology, the other by the Harvard School of Public Health. In the former case there was found to be "insufficient evidence to conclude that 2,4-D is a carcinogen or that existing uses of 2,4-D in Ontario pose a significant health risk." The Harvard panel, half of whom were nationally recognized epidemiologists, concluded that "While a cause-effect relationship is far from being established, the epidemiological evidence for an association between 2,4-D and non-Hodgkins lymphoma is suggestive and requires further investigation. There is very little evidence of an association between use of 2,4-D and soft tissue sarcoma or Hodgkins disease, and no evidence of an association between 2,4-D use and any other form of cancer."

### OR-0238.

**Comment No. 7:** "This cancer concern was in addition to demonstrated neurotoxicity in humans and developmental and reproductive toxicity in animals."

**Response:** A further statement on page 6 speaks to the "demonstrated neurotoxicity in humans and developmental and reproductive toxicity in animals." The neurotoxicity of 2,4-D is discussed in the Region 6 EIS on page 3-55,56. The cases discussed are each in individuals who were exposed to significant amounts of concentrated material either by dermal contact or ingestion. (There are several other cases in the literature, including suicide attempts, that for some reason were not included in the EIS.) These cases extend back three decades. Many such heavy exposures resulted in no evidence of neural effect. No cases have been reported in the literature of such responses in exposures to dilute material. Efforts to show such effects in animals have not been successful, as the Region 6 EIS states.

Developmental and reproductive toxicity of 2,4-D in animals has been well known since the fifties. Most chemicals will produce these classes of effects in the laboratory, if the health of the mother is not impaired first. 2,4-D is not particularly potent as a teratogen, fetal intoxicant or reproductive toxicant. The critical point is that such responses are dose dependent and demonstrate thresholds of effect, and the margins of safety are high. A good reference is the risk assessment by Shipp et al. conducted for the Washington Department of Natural Resources. 2,4-D does not represent such hazards in its use as a rangeland herbicide.

### OR-0238.

**Comment No. 8:** "The public perception of risk must be treated more seriously."

**Response:** In the second full paragraph on page 6 is reference to perception of risk, referring to an article by Paul Slovic, who is well known and respected for studies of the perception of risk. Slovic describes these phenomena, he does not assign values. The fact that risk is perceived to be high does not make risk greater than it is. Efforts by BLM to explain risks realistically are laudable. The agency has the obligation to explain risk on the basis of current knowledge, and should not assume that an activity has great risk because part of the society believes or states that it is so without evidence supporting the contention.

### OR-0238.

**Comment No. 9:** "BLM must disclose the uncertainty and unknowns surrounding inert ingredients."

**Response:** The third full paragraph on page 7 is a general discussion of the failures of EPA in regulating inert ingredients, and speaks only peripherally to the questions pertinent to the draft EIS. Reference is made to an article in the Journal of Pesticide Reform by its editor, Mary O'Brien. Both the paragraph in question and the article make statements that are not consistent with the EPA Inerts Strategy as reported in a briefing to the Assistant Administrator for OPTS on February 6, 1990. Perhaps more pertinent are comments addressed to the question of inerts and contaminants in the Roundup formulation of glyphosate.

The implication in the comment and the article mentioned above is that the polyethoxylated amine is a highly toxic material, and that it finds a convenient hiding place as a list 3 inert. This surfactant is similar to those used in a wide variety of personal health and household cleaning products. Its toxicity is essentially the same as the surfactant in those products.

In attachment G and attachment H, another article by O'Brien, much is made of a letter to the editor of Lancet by Japanese physicians commenting on suicide attempts by Japanese, with Roundup. They comment that the severe gastrointestinal effects were caused by the surfactant, and discussed other symptoms. The responses of those patients are precisely what one would expect of ingestion of large amounts of surfactants, which are detergents. The same effect would have been accomplished with smaller quantities of dishwashing fluid. No chemical is free of toxicity, and suicide attempts have absolutely no bearing on the safety or lack thereof of herbicides. The observations do suggest, however, that it would be difficult to acquire a significant dose by accident.

As part of the argument in Attachment G, the statement is made that the surfactant is lethal to sockeye



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fry at a concentration of 2.6 ppm, over a 96 hour exposure, and that it is 400 times more toxic than the Rodeo formulation, which has no surfactant. Reference is made to a paper by Servizi et al (Bull. Env. Cont. Tox 39:15, 1987) This paper reported studies of glyphosate alone, the surfactant alone and the Roundup formulation. The findings are not inconsistent with those of Folmar et al (Arch Envir. Cont. Tox. 8: 269, 1979) or by Mitchell et al (Bull. Envir. Contam. Tox. 39:1028).

It is in fact more toxic to fish than glyphosate, primarily because of the very limited toxicity of glyphosate. The intrinsic toxicity of the surfactants is a function of effects on gills and irritant responses that are analogous to those experienced when shampoo gets in the eyes. Surfactants are found in many formulations; Roundup is one of few in which the pesticide itself is less toxic than the surfactant.

If fish are to be the indicator, as presumably the most sensitive species, a finding of a 96 hour (four day) LC<sub>50</sub> of 2.6 ppm indicates a rather low potential for effect. At 15% surfactant in the formulation, this suggests a formulation 96 hour LC<sub>50</sub> of about 17 ppm. In fact the 96 hour LC<sub>50</sub> for Roundup to fingerling and fry sockeye and rainbow trout fry was about 25 ppm. Coho were less sensitive. For perspective, a 2kg/hectare application of glyphosate, as Roundup, would carry with it 0.73 kg surfactant. It takes little arithmetic to show that if that application were laid directly on water 10 cm deep, the calculated concentration would be 0.073 ppm. To reach 25 ppm would require an application equivalent to 600-700 kg of glyphosate per hectare.

### OR-0238.

**Comment No. 10:** "BLM must address the issue of 1,4-dioxane and POEA in glyphosate formulations."

**Response:** The concern expressed about the 1,4-dioxane contaminant of the surfactant is more appropriate. 1,4-dioxane is a condensation product of the ethylene oxide from which the long chain surfactant is synthesized.

The commenter has made an error at the top of page 8, in describing 350 ppm as 0.35% and relating this to other products containing 0.42 and 0.55% said to have prompted warnings to workers. 350 ppm is 0.035%.

It is in fact carcinogenic when fed in the diet at daily doses over 1000 mg/kg, and produces kidney and liver lesions at doses in excess of 100 mg/kg/day. Inhalation studies produced no carcinogenic responses. It is genetically inactive; that is it does not have mutagenic activity. Its presence has been known in the formulation for about a decade by the manufacturer and EPA. It is also present in a very

large number of personal health and cosmetic products containing this class of surfactant, and is an extensively used industrial solvent.

EPA in 1981 concluded that a 300 ppm contamination in the formulation was unlikely to result in adverse health effects. This conclusion is supported by risk estimations, consideration of the behavior of the material in the environment and very limited ability to penetrate the skin.

The present concentrations of 1,4-dioxane in Roundup are less than 30 ppm and do not represent a significant health risk.

### OR-0238.

**Comment No. 11:** "Ammonium thiocyanate must be addressed in the EIS."

**Response:** See response to CO-0235, Comment No. 3.

### OR-0238.

**Comment No. 12:** "BLM has not discussed problems with immune suppression as a potential toxic effect of using pesticides."

**Response:** As yet, a registration battery for immune effects of pesticides has not been established by regulatory agencies. It is generally agreed, however, that a lifetime exposure to a chemical, as in a carcinogenicity assay, without evidence of increased infectious disease is strong evidence that immune function has not been compromised. Absence of carcinogenicity adds to the strength of the evidence.

It is stated that the Region 6 EIS summary of 2,4-D effects "indicates that 2,4-D altered immune function, demonstrated effects on lymphocytes in utero and suppressed antibody production." The EIS has been misread and does not support the comment. Three papers are quoted in the EIS. Blakley and Schiefer (1986) conclude that the results suggest that 2,4-D esters are unlikely to have any major immunotoxicological significance. The suppressed antibody production mentioned was seen at a dose of 500 mg/kg (often a lethal dose), and were considered by the authors to be a secondary manifestation of clinical injury. In another paper (describing acute and subacute studies at "relatively high exposures") a similar conclusion was reached. (Blakley, 1986) In the teratological study (Blakley and Blakley, 1986) the EIS states that "no net suppressive effect was observed, and although subtle effects were noted in lymphocyte blastogenesis, the authors concluded that the 2,4-D ester was unlikely to be of any immunotoxicological significance."



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### OR-0238.

**Comment No. 13:** "BLM has not addressed the potential for 2,3,7,8-TCDD to be in 2,4-D."

**Response:** The referenced finding of TCDD in 2,4-D is the only known instance where such a finding has occurred, despite efforts by many investigators and EPA to find this contaminant. Inspection of the paper reveals that several compounds were analyzed, including pentachlorophenol and other materials expected to have high concentrations of TCDD and other chlorodioxins. The levels of TCDD in those materials was quite low, and that in 2,4-D was astonishingly high. This circumstance is not logical and highly suspicious, and indicates either external contamination from another source, or a sample made under very poor control of starting materials and reaction conditions. The 2,4-D used in this work was the only material for which a source was not identified. There has been an intensive effort by interested parties to find the source, and it now seems certain that the 2,4-D in question originated in eastern Europe.

This finding has no bearing on the purity of domestically produced 2,4-D.

### UT-0239, Cheryl Grantham.

**Comment No. 1:** "The DEIS inadequately addresses the potential for groundwater contamination from the application of herbicides."

**Response:** We agree that the potential for ground water contamination from herbicides was not adequately addressed in the draft. We have incorporated several additions to the sections to address the ground water concerns.

### UT-0239.

**Comment No. 2:** "The importance of the ground-water resource as a drinking water supply in these arid western states cannot be overemphasized... EPA has recently ranked the vulnerability of groundwater to contamination in each county in the U.S. ..."

**Response:** We agree. We have added additional emphasis to the use of ground water as a drinking water supply. See text for revised section. Also, see response to UT-0104.

### UT-0239.

**Comment No. 3:** "According to EPA's current standard setting policy, these substances are not permitted to be present in public drinking water supplies at any detectable levels."

**Response:** We agree that there are many compounds for which drinking water standards are not developed. We do not believe that anything in the statement about drinking water standards implies that there are strict standards for all herbicides. Monitoring standards for many cases may be established by the state water quality regulator. Based on our standard operating procedures, any herbicides from our operations reaching the ground water in any level causing environmental or health effects would be unacceptable.

### UT-0239.

**Comment No. 4:** "Several of the aquifers in the DEIS area are inherently susceptible to leaching and contamination...Consequently, both soil and aquifer characteristics common in this region make it impossible to dismiss the potential for contamination."

**Response:** We agree that the potential does exist in some areas. We did not intend to dismiss the potential. Rather, the impacts associated with a high potential area would have been mitigated through the application of standard procedures. We envision that the procedures would likely be adopted as Best Management Practices (BMPs) by the appropriate state agency. These procedures have been included under Mitigation.

### UT-0239.

**Comment No. 5:** "Eight of the 19 herbicides proposed for use by BLM are ranked as having high leaching potential..."

**Response:** The DEIS listed very few data on the leaching potential of pesticides. Information has now been included where it is available.

The Surface Water Impacts and the Ground Water Impacts in the Chemical Methods of the Environmental Impacts Section have been rewritten to reflect the leachable pesticides identified in EPA (1987).

### UT-0239.

**Comment No. 6:** "The DEIS does not attempt to quantify the increased sediment delivery to surface water that will be experienced due to reduction in vegetation...Many areas in the DEIS region have highly erodible, low organic-matter soils, considerable slope, and are subject to occasionally intense precipitation resulting in potentially severe soil erosion if vegetation is disturbed or eliminated."

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**Response:** Quantification of project specific impacts is not within the scope of this document (see Tiering section). Both the Soils and Aquatic Resources section discuss the factors important in controlling erosion and subsequent sediment delivery. The possible impacts surrounding vegetation treatment are generally short term. In most cases it is expected that vegetation cover will increase in the long term, thus reducing erosion. The revegetation success coupled with the occurrence of extreme precipitation events will largely determine the fate of erosion. Many of the areas proposed for certain types of vegetation treatment will not meet the criteria described under Standard Operating Procedures (SOPs). We have expanded the SOP section to be more specific on the types of areas and conditions that will be avoided for soil disturbing/vegetation removal activities.

### UT-0239.

**Comment No. 7:** "The most commonly used method of biological treatment is grazing by cattle, sheep, and goats. The effect of increased grazing on unstable soils, steep slopes, and in riparian areas is rarely negligible."

**Response:** Biological treatment using ungulates would be done in accordance with Standard Operating Procedures (SOPs). The following procedures were added to clarify where ungulates would not normally be used. Generally, biological methods using ungulates would avoid erosion hazard areas, areas of compactible soils, riparian areas susceptible to bank damage, and steep erodible slopes.

### UT-0239.

**Comment No. 8:** "This increased sediment will undoubtedly have adverse impacts on fish and aquatic organisms. The extent of this impact is not addressed."

**Response:** See response to NM-0067.

### UT-0239.

**Comment No. 9:** "In many areas the soil mantle is thin to nonexistent. The pH is typically high. This reduces the adsorption of ionizable herbicides such as 2,4-D, picloram and atrazine and increases the degradation time of others. Several of the aquifers in the DEIS area are inherently susceptible to leaching and contamination. The Columbia basalts are highly fractured and alluvial valley fill aquifers typically display considerable porosity. Consequently,

both soil and aquifer characteristics common in this region make it impossible to dismiss the potential for contamination."

**Response:** A wide variety of soils and soil conditions exist in the EIS area. Soil parameters that affect the chemical persistence and degradation time along with many other factors will be considered during the site specific analysis of individual proposed vegetation treatments.

### UT-0239.

**Comment No. 10:** "The DEIS does not attempt to quantify the increased sediment delivery to surface water that will be experienced due to reduction in vegetation. This increased sediment will undoubtedly have adverse impacts on fish and aquatic organisms. The extent of this impact is not addressed."

**Response:** The BLM recognizes the potential for increased sediment loads due to short term soil erosion caused by vegetation treatments. However, erosion potential, in terms of physical soil characteristics, slope, existing and potential ground cover, etc. will be evaluated on a project specific basis before any action takes place. Restrictions or mitigation of treatments to reduce the erosion potential may be applied on a site specific basis. As any other entity, the BLM must comply with individual state water quality standards.

### UT-0239.

**Comment No. 11:** "The assumption of negligible impact from biological treatment methods needs to be reevaluated."

**Response:** When domestic animals are to be used as a biological treatment method they will be used specifically as a biological control agent and managed accordingly. In these situations animals are usually used to graze off the top portion of the plant to prevent flowering, then taken off or moved to a different area. In some situations it is necessary to return later in the growing season to remove the next flowering stage. When used in this manner impacts should be negligible.

Additional information has been provided in Chapter 1.

### UT-0247, Christopher Billoft.

**Comment:** "Selective tree removal should be used, if necessary, as an alternative to chaining."

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**Response:** Even though "chaining" is a non-selective type treatment, it is one of the more inexpensive and efficient ways to accomplish the objectives of vegetation treatment in the pinyon/juniper type.

Selective tree removal is possible as a manual treatment method. However, it is labor intensive and could be implemented only on a small scale. As a result, it would not be practical to apply it to a project sufficient in scope to meet the objectives of (a) increased soil stability and (b) improved water quality. (See Chapter 3, Section 2.)

Also, in areas where artificial seeding is needed, chaining is an essential treatment for covering the seed with soil to enhance its germination. This would not be accomplished with a selective tree removal program.

### UT-0252, Jane Lasson.

**Comment No. 1:** "The EIS... dismisses the value of ancient pinyon forests and bird, animal, and plant communities dependent upon them."

**Response:** See response to CO-0227, Comment No. 7.

### UT-0252.

**Comment No. 2:** "The descriptions are simply too generalized thereby ignoring the extent to which, for instance, eradication of an ancient pinyon forest might have on potential uses of that area, or analyzing the impact of eradication a remnant stand of sagebrush on a remnant population of sage grouse."

**Response:** Part of the site-specific environmental analysis that will occur on the proposed projects, prior to their implementation, should include consideration of the significance of the vegetation communities as wildlife habitats. Statements on the consideration of old growth communities as important wildlife habitats have been added. Several statements have been added to the Final EIS, further emphasizing the significance of sagebrush habitat for sage grouse and the need for giving the interrelationship of these two species extra consideration (Chapters 1 and 3).

### UT-0252.

**Comment No. 3:** "The plan states that most of the proposed treatments target upland sites, with the intent to improve or stabilize vegetation and watershed conditions. Is the transformation of upland plant communities BLM's solution to the destruction of riparian areas from overgrazing?"

**Response:** Current BLM policy calls for a significant improvement in condition of riparian areas by 1997. Several of these vegetation treatments are planned to assist in the improvement of riparian areas through the improvement and stabilization of the adjacent upland vegetation communities. However, riparian areas cannot be permanently improved unless the watersheds feeding the riparian areas are also improving or in good condition. Riparian area management must be considered in a holistic view. Riparian areas and the adjacent uplands must be improved and managed together to achieve a lasting and significant watershed stabilization or improvement.

### UT-0252.

**Comment No. 4:** "The program very clearly states that no additional employment would result from this plan (page 3-124)."

**Response:** The economic impact section states that "The increase in employment that would be required to implement Alternative 1 through 4 is not likely to be significant..." The text for alternative 5 is changed to indicate that new jobs would be created (Chapter 3).

### UT-0252.

**Comment No. 5:** "The EIS states that recreation values on these unidentified, millions of acres constitute only 1% of the total value. Allocating only 1% to recreation is an arbitrary and capricious dedication of resources that I do not believe and support. This astounding figure represents a gross underestimation of the value these lands have to the public."

**Response:** The second paragraph on page 2-52 of the DEIS states, "Recreation management is intensively focused on 352 developed recreation areas, constituting approximately 5 percent of BLM-administered lands. Less than 1 percent of the total acreage considered in this EIS is recreation area." The one percent figure refers to acreage, not value, and relates **only** to intensively managed, developed recreation areas rather than all public lands. As the rest of the paragraph infers, **all** public lands, with few if any exceptions, are open to recreation. In the interest of clarification, this paragraph has been rewritten in the Final EIS.

### UT-0252.

**Comment No. 6:** "BLM asserts that negative visual impacts would be short-term while long-term impacts would be beneficial. No justification or explanation is given."



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**Response:** The eighth paragraph on page 3-59 of the Draft EIS stated in part, "Where areas are treated by methods that could significantly change visual contrast (quality), short-term adverse impacts of visual resources would occur. However, based on standard operating procedures and long range plans, the long-term impacts would be beneficial. The intensity of the impact would depend on the treatment method and the area where it was implemented." Explanations are given in succeeding paragraphs which discuss both short and long-term impacts and benefits of each vegetation treatment method.

### UT-0252.

**Comment No. 7:** "It oversimplifies and dismisses a very real potential for widespread groundwater contamination from spraying herbicides." The letter also includes several comments on monitoring.

**Response:** See responses to UT-0239, and UT-0104.

### UT-0252.

**Comment No. 8:** "The lack of a benefit analysis is a violation of the Council on Environmental Quality's national Environmental Policy Act (NEPA) regulations 40 CFR 1502.23."

**Response:** CEQ does not require a cost-benefit analysis. If one is done then it must be incorporated by reference or appended to the statement.

### UT-0252.

**Comment No. 9:** "NEPA's cost-benefit analysis section states 'an environmental impact statement should at least indicate those considerations (merits and drawbacks of various alternatives) including factors not related to environmental quality, which are likely to be relevant and important to the decision' (40 CFR 1502.23). While the BLM has identified primary beneficiaries of the proposed treatment, quantification of these benefits, which we view as entirely relevant to the decision, are ignored."

**Response:** CEQ does not require benefits to be quantified. Section 1502.23 states "For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations."

### UT-0253, Christine Osborne.

**Comment No. 1:** "The methods of vegetative treatment proposed can be destructive to both target and non-target species. Disruption of native plant ecosystems, displacement of wildlife, and chemical toxicity to plants, animals, and water sources need to be examined in detail before plans of such a large extent can be recommended."

**Response:** See response to NM-0073 Comment No. 2.

### UT-0253.

**Comment No. 2:** "The annual acreage proposed for treatment appears as a set of arbitrary numbers based only loosely on current resource management plans."

**Response:** Acreages will be determined as specific on-the-ground site plans are developed and specific environmental analyses are completed. The BLM will not exceed the acres projected in Tables 1-2 through 1-6 on an average annual basis over the life of the EIS. Acreage figures shown are representative of decisions made in existing land-use plans.

Available funds, availability of seed, and available manpower all influence how much actual land treatment will be completed in any given year.

The rate of spread of noxious weeds is very difficult to predict. As new biological control agents become available, some of the chemical control proposed may be reduced. Climate cycles also influence the rate of spread of noxious weeds.

### UT-0253.

**Comment No. 3:** "In a 1975 symposium at USU, range scientists concluded that most chainings failed to deliver on their promises, with the majority of chained areas eventually reverting back to woodland. This is confirmed by the large number of second treatments applied to previously chained areas."

**Response:** A great deal has been learned about site selection and project design and there are many areas with demonstrated non-livestock benefits from type conversion of woodlands. Type conversions provide an opportunity to establish palatable shrub ecotypes (such as sagebrush, rabbitbrush, and bitterbrush) and forbs that provide much



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needed protein and early spring forage for wildlife otherwise not available in sufficient abundance in some woodland areas. With design features to provide sufficient hiding cover to allow wildlife to use available forage, conversions can be of real benefit in areas where low seasonal forage quality and quantity are limitations to some wildlife species.

Failure of the technique is not, however, demonstrated by second treatments applied. Vegetation is dynamic and communities change over time. This is a fundamental aspect of plant ecology and successional theory. A follow-up treatment, such as prescribed fire, applied within a year or two after initial treatment, is just the second step of a two-step treatment prescription. Much of both the upper and lower boundaries of the pinyon-juniper type can be viewed as a woodland/shrubland/grassland interface or tension zone, which can be dominated by one lifeform or another depending on disturbance regimes such as fire, herbivory, and drought in combination with other climatic factors and soil characteristics, and where natural fluctuations between dominate types are common. Most converted woodlands would not be expected to remain dominated by herbaceous vegetation even in the total absence of herbivory (livestock, wild ungulates, rodents) without some sort of periodic disturbance that gave a competitive edge to the herbaceous components, barring a significant climatic change. Prior to European settlement, disturbance regimes maintained some sites in herbaceous cover that may have been woodland in the absence of such disturbance. Type conversion simply applies this principal to selected sites where it is determined that such treatment is the best way to meet various land use objectives.

### UT-0253.

**Comment No. 4:** "It would seem mandatory that these questions are clarified or the entire proposal is simply an administrative exercise in justifying the existence of these range improvement projects."

**Response:** This EIS not only addresses vegetation treatment for rangeland, but also addresses public domain forests, oil and gas sites and facilities, rights-of-ways, and recreation sites in addition to noxious weed control in the states of Nevada, Utah, Colorado, North Dakota, South Dakota, Arizona, New Mexico and Oklahoma. The proposed annual acreage is an average dependent upon budgetary constraints.

### UT-0253.

**Comment No. 5:** "The comment letter, in several places, raises concern about ground water."

**Response:** See responses to UT-0239, and UT-0104.

### UT-0254, Dee Hansen.

**Comment:** "Research has also demonstrated that vegetation manipulation is important to maintain good watershed condition."

**Response:** See responses to AZ-0088, and UT-0239.

### UT-0255, James E. Bowns.

**Comment:** "Many stands of sagebrush are similar to the Pinyon-Juniper stands because they also lack understory or associated species. Improved management systems or complete elimination of livestock will not change this situation. The only way to increase the production of desired plants is to reduce the amount of sagebrush and seed the area to desired species. Sagebrush can be reduced by treatment. Seeding with desirable grasses, forbs and shrubs is necessary where native understory is lacking."

**Response:** Refer to revised text in Chapter 1, Weed Management Treatments and Design Features, Chapter 2, and common issue Noxious Weed Management in Chapter 4.

### UT-0256, Michael Heyrend.

**Comment No. 1:** "Concentration of these chemicals in the air and water can result in contamination of these resources." (Followed by discussions of amitrole, atrazine, picloram, triclopyr, and 2,4-D).

**Response:** To recognize the potential for impacts to wildlife the following statement has been added to the Mitigation section (Chapter 1) and into the impacts evaluation sections (Chapter 3). "To minimize impacts to fish and other aquatic wildlife, amitrole and dalapon are no longer proposed for use, and the use of atrazine, clopyralid, dalapon, diuron, simazine, triclopyr (butoxyethyl ester only), 2,4-D, or diesel oil carriers will be very carefully regulated and applied when the treatment area is adjacent to aquatic habitats."

### UT-0256.

**Comment No. 2:** "Herbicides adversely impact fish reproduction and growth, and indigenous wildlife populations. The bioaccumulation of toxins in fish and game species poses a significant threat to the health and welfare of these populations."

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**Response:** See responses to NM-0073, Comment No. 2, and UT-0114, Comment No. 3.

### UT-0256.

**Comment No. 3:** "... soil disturbance due to mechanical clearing will increase sediment levels in streams. Sediment effectively destroys areas important for fish spawning."

**Response:** Please refer to UT-0239, comments number 8 and 9..

### UT-0256.

**Comment No. 4:** "Amitrole, for instance has been designated by the EPA as probable human carcinogen and can persist in plants, animals and water."

**Response:** See response to CO-0235, Comment No. 3.

### UT-0256.

**Comment No. 5:** "Atrazine is probably the most common pesticide contaminant of groundwater and is acutely toxic to aquatic invertebrates and amphibians."

**Response:** See response to OR-0238, Comment No. 2 which deals with groundwater concerns.

### UT-0256.

**Comment No. 6:** "...a new National Cancer Center Institute study of lymphoma contraction in Kansas farmers found significant links with atrazine."

**Response:** The study by Hoar, et al., based its triazine conclusions on only 3 cases of NHL. This study has been reviewed extensively and shows an equivocal link between herbicides and cancer, not conclusive proof.

### UT-0256.

**Comment No. 7:** "2,4-D increases risk of contracting lymphoma and peripheral neuropathy in humans."

**Response:** See responses to OR-0238, Comments No. 6 and No. 7.

### UT-0256.

**Comment No. 8:** "...the indirect impacts of bioaccumulation...woefully neglected."

**Response:** See Appendix E8-1 for a discussion of expected bioaccumulation at the top of column 2.

### UT-0256.

**Comment No. 9:** "The lack of a benefit analysis is a violation of the Council on Environmental Quality's national Environmental Policy Act (NEPA) regulations 40 CFR 1502.23."

**Response:** See response to UT-0252.

### UT-0256.

**Comment No. 10:** "NEPA's cost-benefit analysis section states "an environmental impact statement should at least indicate those considerations (merits and drawbacks of various alternatives) including factors not related to environmental quality, which are likely to be relevant and important to the decision" (40 CFR 1502.23). While the BLM has identified primary beneficiaries of the proposed treatment, quantification of these benefits, which we view as entirely relevant to the decision, are ignored."

**Response:** See response to UT-0252.

### UT-0256.

**Comment No. 11:** "In addition, the DEIS ignores the substantial indirect costs of the proposed activities."

**Response:** See p. 3-126 in the draft EIS for a discussion of indirect economic impacts and FEIS, Chapter 3.

### UT-0256.

**Comment No. 12:** "The BLM fails to recognize in the DEIS that many areas currently under multiple use are under consideration for wilderness through bills presently before Congress (e.g. HR 1500). No special management of these areas is proposed by the agency even though Congressional support for this legislation is manifest through increasing numbers of co-sponsors. The DEIS should view these areas as "Areas of Special Consideration (ASC)" for their

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qualities that distinguish them as potential wilderness areas. In these ASCs, vegetation treatment activities should be banned so that these areas can maintain the values which the public, as represented by Congress, aims to preserve."

**Response:** The fact that many BLM areas currently under multiple use management are under consideration for designation as wilderness through bills presently before Congress does not change existing BLM management policy, practice, or procedure. Areas currently under multiple use management will continue to be managed under the principles of multiple use, regardless of whether they are being considered in specialized legislation for designation as wilderness. Areas that have been declared Wilderness Study Areas (WSAs) will continue to be managed in accordance with the Bureau's Interim Management Policy and Guidelines For Lands Under Wilderness Review (Update Document H-8550-1 dated 11/10/87), which assures wilderness character will not be irreparably damaged. BLM policy and management practice with regard to vegetation treatment in designated wilderness areas and WSAs is briefly described on pages 1-24 and 1-25 of the Draft EIS and in more detail on pages 3-62 and 3-63.

### UT-0256.

**Comment No. 13:** "Native American religious and cultural concerns are not being addressed in the EIS."

**Response:** See response to MT-0112, Comment No. 1.

### UT-0258, Chris Call.

**Comment No. 2:** "The first sentence on the second column, page Exec-4 summary is not correct. It states that seedbanks reduce the susceptibility of plants to herbicides."

**Response:** The text has been revised.

### UT-0258.

**Comment No. 3:** "The sentence, 'Nontarget plant species should reestablish after treatment,' in the vegetation section under the Environmental Consequences heading (p. Exec-3) is broad-sweeping, and has little support. Delete the sentence or support it by describing the types of nontarget species responses or the time frame for reestablishment."

**Response:** The sentence was deleted from the Executive Summary in the Final EIS, as it is not practical to detail supporting material in this section. Principles governing nontarget species response and reestablishment were discussed for each treatment method in DEIS Chapter 3, Section 1, pages 3-5 through 3-29.

### UT-0258.

**Comment No. 4:** "The first sentence of the 2nd paragraph on p. Exec-4 is not totally correct. Under certain environmental conditions, e.g. drought, resprouting woody species such as rabbitbrushes, mesquite, and acacias can replace above-ground structures more rapidly than herbaceous species because they may have more extensive root systems to tap deep soil moisture."

**Response:** Paragraph has been revised.

### UT-0258.

**Comment No. 5:** "The sentence at the top of the 2nd column on page Exec-4 states that seedbanks reduce the susceptibility of plants to herbicides. That is not the case; seedbanks increase the regenerative capacity of species after treatment, but they have no bearing on susceptibility of the plant to herbicides."

**Response:** The statement "seedbanks reduce the susceptibility of plants to herbicides" is incorrect. However the regeneration capacity of species from seedbanks after treatment is dependent upon the residual affect from the herbicide upon the new seedlings. Therefore one must consider which herbicides should or should not be used to cause the least or no effects on the seedbank of the nontarget or desired plant species.

### UT-0258.

**Comment No. 6:** "You may want to check with the manufacturer about the future use of atrazine on rangelands. I have heard that it will not be re-registered for use on rangelands."

**Response:** The determination has not been made at the present time whether or not atrazine will be re-registered for use on rangelands. If atrazine is not



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re-registered the use will be cancelled as appropriate.

### UT-0258.

**Comment No. 7:** "The sentence 'Nontarget plant species should reestablish after treatment,' on page Exec-3 is broad sweeping, and has little support. Delete the sentence or support it by describing the types of nontarget species responses or the time frame for reestablishment."

**Response:** The sentence "Nontarget plant species should reestablish after treatment" has been deleted from the text. There are many variables that must be considered when considering any treatment method. When considering any treatment method one has to consider the growth characteristics, sensitivity to the treatment method, life span etc. of both the target and nontarget plant species present at the time of treatment.

### UT-0258.

**Comment No. 8:** "On page 1-11 and on page C-3 in the Appendix, you distinguish between microbial and viral agents and plant pathogens as different biological treatments. Plant pathogens, e.g. fungi, bacteria, and viruses, are considered microbes. Also on page C-3, you distinguish between genetic improvements of plant adaptability and reproduction and interspecific plant competition as different biological control treatments. They are similar."

**Response:** See revised text on biological treatments in Chapter 1, and biological methods in Appendix C.

### UT-0258.

**Comment No. 9:** "Revegetation is a vegetation manipulation treatment, and it should be discussed in adequate detail so the reader can understand the associated impacts."

**Response:** Not all treatments proposed will require revegetation. The need for revegetation will be determined as site-specific treatments are proposed in local activity plans for watershed, wildlife, livestock grazing, or fire management. Section 1 of Chapter 3 discusses circumstances when revegetation is recommended in conjunction with various treatment methods in all analysis regions. Site-specific impacts of revegetation will be addressed in site-specific analyses conducted prior to treatment. Analysis region-level impacts are discussed in Section 2, Chapter 3.

### UT-0262, Chuck Woolstein.

**Comment No. 1:** "... recommend that the BLM and others involved in chaining establish an external advisory board of professional scientists... to review each proposed site for chaining with regard to research questions of biology, archeology, anthropology, paleontology, soil science hydrology, etc."

**Response:** Establishment of an independent advisory board would not be practical due to the size and geographical scope of chaining projects. Each District has a charter Multiple Use Advisory Board along with a District Grazing Advisory Board. Notification of these meetings and items to be discussed are published in the Federal Register. Interested individuals are welcome to attend these meetings and provide comments on proposed projects.

### UT-0262.

**Comment No. 2:** "Cultural resources need to be addressed in project specific environmental analyses."

**Response:** See response to WY-0085.

### UT-0264, Gary McFarlane.

**Comment No. 1:** "The EIS, particularly in the summary, overstates the benefits of maximizing vegetation treatment. For example, alternative 1 would not necessarily have the most beneficial impact on wildlife, (Exec-5). Vegetation treatment may help mule deer in specific areas but, as the EIS later notes, Any change in community vegetation structure or composition is likely to be favorable to certain animal species and unfavorable to others." (page 3-46). Most of the species aided by vegetation treatments are not in danger whereas many species dependent on specific habitats are less stable and they are the ones most likely to be harmed from vegetation treatments."

**Response:** The Executive Summary (Exec-5) has been rewritten in the Final EIS to better reflect the potential impacts to fish and wildlife as well as the expected impacts. The impact analysis portions have been revised with this same type of structure to give a better understanding and support for why the statements of impacts were made, and to support the addition of more detailed mitigation.

Habitat treatments should not jeopardize a special status species for the benefit of a common species, even if the common species is of significant economic importance. It is suitable, however, to improve habitat for a common species when there



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are no significant adverse impacts to special status species and the common species will receive a significant habitat benefit with a carry-over benefit to hunters or other wildlife recreation users.

### UT-0264.

**Comment No. 2.** "The EIS is unclear as to whether vegetation manipulation would be allowed in WSAs and wilderness areas. It is clear the IMP and Wilderness Act prohibit any chemical or mechanical treatments."

**Response:** The EIS is quite clear as to whether vegetation manipulation would be allowed in WSAs and wilderness areas. See pages 1-24, 1-25, 3-62, and 3-63 of the Draft EIS for descriptions of BLM policy and management practice, and those same sections are present in the Final EIS.

### UT-0265, Genevieve Attwood.

**Comment:** "How does chaining foster natural biological diversity and ecological stability within the Colorado Plateau? What is the ecological impact of chaining a pinyon-juniper woodland during a drought cycle?"

**Response:** Disturbing a vegetation type that has a demonstrated history of disturbance (refer to Pinyon-Juniper analysis region description in Chapter 2), portions of which contained a productive and sometimes dominant herbaceous element as a result of this disturbance, and which has been documented to have expanded both its density and range in some areas can be viewed as an attempt to mimic these past disturbance regimes. Present woodland conditions which are a result of historic overgrazing and fire exclusion should not be viewed as representing any sort of benchmark for natural biological diversity or ecological stability on the Colorado Plateau. The small amount of chaining acreage proposed is not anticipated to have significant effects on either natural biological diversity or ecological stability within the Colorado Plateau. We would expect ecological impact of chaining a woodland during a drought cycle to be slower recovery and establishment of vegetation in general.

Results following chaining and seeding usually show a greater variety of plant species being produced which fosters an increase in bio-diversity and a greater production of forage for grazing animals. Pinyon-juniper (P-J) chainings and seedings during a drought are more risky than during a wet cycle. However, most of the various seeds remain viable for an extended period and will continue to germinate for up to several years.

Also, revegetated areas produce early spring plant growth which supplies forage to lactating animals - both livestock and wildlife.

### UT-0269, Roger Banner.

**Comment:** "Also, a general assessment of impacts that might be expected from changing the vegetation from one cover type to another on carbon fixation, retention and release may strengthen the final EIS by assessing expected impacts of managing or not managing the vegetation. Ultimately, comparisons of the various vegetation types in terms of estimated net carbon fixed, held and released into the atmosphere would need to be made. This information would need to be placed in perspective relative to the significance of the effect and current scientific information."

**Response:** See response to UT-0130.

### UT-0271, Allen Rasmussen.

**Comment:** "The revegetation process following many of the techniques are critical in the success or failure of the project. While it was noted that if revegetation is successful many negative impacts are minimized, revegetation failures resulted in degradation primarily of soil loss or an undesired plant composition. The techniques which are going to be used should be considered."

**Response:** This concern has been incorporated into the discussion of Standard Operating Procedures in Chapter 1.

### UT-0274, James Catlin.

**Comment No. 1:** "Monitoring of wildlife by BLM is extremely rare. The state does monitor game species. Without this base of information, it is impossible to assess the impacts of these range projects or changes in domestic livestock use."

**Response:** The Fish and Wildlife program in the BLM is evolving from a support program for commodity uses into a full resource management program. Fish and Wildlife 2000 and the supporting subdivided "strategies," have demonstrated the extent of the resource to be managed by the BLM and the need for better management.

### UT-0274.

**Comment No. 2:** "...the most preferred and easily damaged plants in riparian areas should be monitored."

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**Response:** Recent emphasis on the management of riparian areas on the public lands has demonstrated the need to more actively manage the riparian resource and to monitor the effects of land uses on that resource. As management plans and activity plans, such as allotment management plans and habitat management plans, are revised and developed there will added emphasis on monitoring and improved management of riparian areas on public lands.

### UT-0274.

**Comment No. 3:** "The DEIS needs to identify relic plant communities and prohibit any vegetation alteration projects, including use by domestic livestock. Access by vehicles and domestic livestock needs to be restricted or eliminated."

**Response:** BLM recognizes the scientific and natural value of relic plant communities and tries to identify and protect them wherever they can be found. These areas are often designated as Areas of Critical Environmental Concern or Research Natural Areas. The ecological role and frequency of disturbance in maintaining that community must be determined and understood. Prescribed fire might be recommended in some of these areas, but other vegetation alteration, including grazing by domestic livestock, normally would not be proposed. If certain known relict areas have been proposed for prescribed burning as part of the proposed action or one of the other alternatives, impact analysis and fire effects do not have to be addressed separately for these areas. Their identification, protection, and details of their management however, are beyond the scope and purpose of the EIS.

### UT-0274.

**Comment No. 4:** "The DEIS needs to address the issue of what plants and animals are considered pests."

**Response:** Refer to Appendix I for the list of plants that will be considered for treatment.

### UT-0274.

**Comment No. 5:** "Biological management alternatives have the greater potential for improving the public range lands."

**Response:** Biological pest management is only one portion of an overall pest management program. See revised text in Chapter 1 under Biological treatments and Project design features sections.

### UT-0274.

**Comment No. 6:** "Many BLM lands are now under wilderness study. The DEIS fails to describe which treatment projects affect specific areas. This needs to be done in the EIS."

**Response:** See UT-0256, Comment No. 8.

### UT-0274.

**Comment No. 7:** The comment letter raises concern about the need for water quality monitoring.

**Response:** See responses to UT-0104, and UT-0239.

### UT-0274.

**Comment No. 8:** "For each of the chemicals listed in the DEIS we request references of studies supported by the EPA on cancer studies, birth defect studies, and mutation studies."

**Response:** In the Appendix, page E3-1, there is a section on Sources of Toxicity Information. The final sentences read, "Whenever possible, studies that EPA reviewed and validated were used to set toxicity reference levels. No EPA-invalidated studies were used."

### UT-0285, Nicholas Gardiner.

**Comment No. 1:** "The document does not address the ecological structure and conditions of microclimates and ecotones within the very broad vegetative categories of the DEIS."

**Response:** See response to CO-0115, and Common Issues earlier in this chapter.

### UT-0285.

**Comment No. 2:** "Cultural resources need to be addressed in project specific environmental analyses."

**Response:** See response to WY-0085.

### UT-0292, Susan Way.

**Comment No. 1:** "The oxygen given off by the pinyon pine and juniper is essential to life - this is our rainforest - the loss of water produced by our desert forests will cause an increased drought to our already existing drought."

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**Response:** See response to UT-0130.

### UT-0292.

**Comment No. 2:** "Chaining pinyon-juniper will lead to erosion and loss of habitat and food - upsetting the ecological balance - causing the loss of native wildlife."

**Response:** The existing ecological balance will be upset some for birds and other small animals. However, by adherence to the mitigation and project design features sections, i.e., by leaving islands of trees and irregular boundaries for edge effect, this will be minimized and the net effect will be an enhancement of habitat through a bio-diverse vegetative structure and greater forage value for grazing animals, as well as an improved watershed condition.

### CO-2525, Scott Felker.

**Comment:** "1. The DEIS does not address the structure of ecotones and microclimates within the various vegetation types in the west. BLM is making far too many generalizations regarding this."

**Response:** See response to CO-0115.

### WY-2533, David Neary.

**Comment No. 1:** "There are several problems with the list of target plant species contained in Appendix I. It is incomplete (e.g. Canada thistle is not listed for Wyoming), confusing (no explanation is given as to purpose of the list) and inaccurate (e.g. several species listed for Wyoming do not occur here)."

**Response:** Appendix I has been revised.

### WY-2533.

**Comment No. 2:** "Herbicides are not target-specific, and numerous non-target species would suffer from indiscriminate applications such as those proposed in the EIS."

**Response:** The use of herbicides could result in a decrease of species richness. However, during site specific analysis and preliminary planning, some of the considerations taken will be: growth characteristics, sensitivity to treatment method, stage of growth, life span etc. of both the target and non-target plant species at the time of treatment. In many circumstances the time of treatment, rate of application of the herbicide, or both, is different than the

most ideal time or rate to control the target plant species in order to minimize damage to the nontarget plant species. During the site specific analysis the toxicity, exposure and risk of herbicide use in relation to native plant species will be considered in determining treatment method and time of treatment.

### WY-2533.

**Comment No. 3:** "Several of the programs described in the EIS, such as oil/gas site maintenance and range "improvement," would actually increase the risk of noxious weed invasion—by eliminating native vegetation and opening habitat for unwanted invaders."

**Response:** The use of herbicides for oil/gas site maintenance, rights-of-way maintenance, and recreation site maintenance in many situations is for safety factors whereby the removal of all vegetation is required. Range improvement programs are selected for release of selected native species by competition reduction. In certain situations the treatment site will be reseeded with desired native plant species.

### WY-2533.

**Comment No. 4:** "Prescribed burning is considered with herbicide use. Vegetation management through burning should be considered separately as objectives, results and philosophy are very different from the herbicide use."

**Response:** Both prescribed burning and herbicide use are considered vegetation treatments. Therefore, it is proper to cover both of them in this document.

### WY-2533.

**Comment No. 5:** "Is BLM aware of possibly destroying non-target native plants?"

**Response:** Page E2-2 of the draft EIS Application Methods and Herbicide Use states, "...applications are scheduled and designed so that there will be minimal potential impacts on nontarget plants and animals..."

### OR-2539, Nick Facaros.

**Comment No. 1:** "The proposed use of diuron is unjustifiable because data on the herbicide are inadequate to assess risk, as the BLM concluded in the draft proposed record of decision for managing competing vegetation in Western Oregon."



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**Response:** Table E3-7, page E3-33 of the DEIS lists the data gaps for diuron. Pages E3-51 and 52 summarize the known diuron data. EPA has established a reference dose of 0.002 mg/kg/day.

### OR-2539.

**Comment No. 2:** "What makes the assumption 'conservative' and 'likely to exaggerate risks,' when BLM uses them to describe carcinogenicity?"

**Response:** See page E3-11 in the DEIS for an explanation of carcinogenicity tests and how they are used to derive cancer potency values. The second paragraph of the second column gives the assumptions that are made and explains why they are conservative.

### CO-2543, Jeff McWhirter.

**Comment:** "Many things such as water contamination, ...are not adequately covered in this document."

**Response:** See responses to UT-0239, and UT-0104.

### UT-2569, Stephen Trimble.

**Comment:** "Chainings fail to deliver on their promises and are an archaic, unproductive and destructive act."

**Response:** The encroachment of pinyon-juniper trees into areas where they did not previously exist is a fairly major problem which has increased since fire suppression, and development of much of the west. The expansion has been primarily into the sagebrush grass community on the lower edges of the original pinyon-juniper. If unchecked, trees become dominant and eventually crowd out most herbaceous and shrub species that provide forage for livestock and big game (Barney & Frischknecht 1974). This expansion continues even if areas are protected from grazing. Trees maintain increased growth for two or three times as long as any understory cover, resulting in a steady reduction of understory cover and production (Tausch and Tueller 1977).

A majority of the fall, winter, and spring big game and livestock ranges in the Great Basin are located in the pinyon-juniper type. Modern methods and materials when applied can result in improved wildlife value compared to values that have been derived

from older pinyon-juniper projects. The goal of most pinyon-juniper range improvement projects has been to eliminate competitive trees and to seed or otherwise establish more desirable species (Stevens 1986).

Sedwick and Ryder (1987) found many bird species respond negatively to chaining. However small mammal species richness was greater on the chained plot than on the unchained control plot. Chained areas are more valuable for certain raptors as well as mammalian carnivores.

### NM-2572, James Jones.

**Comment No. 1:** "...meets the objective of improving the rangelands...by not allowing treatment that adversely affects riparian areas - both the larger drainages and the smaller tributaries."

**Response:** The rationale and mitigation for avoiding adverse impacts to riparian areas (page 1-23 in the DEIS) has been expanded in the Final EIS. The intent of this document is that vegetation treatments will not have adverse impacts on riparian areas and aquatic habitats. Also, it is believed that improvements can be made in the condition of riparian areas through improved management of livestock, better engineering of roads and other impacting activities, and better overall management of all activities in riparian areas. Our successes in Montana, Oregon, Arizona, and many other places have demonstrated that this is possible. In situations that are severely degraded, a temporary removal of livestock may be warranted, but with improved condition and management, permanent removal should not be necessary.

### NM-2572.

**Comment No. 2:** "Killing woody plants will increase soil erosion, a problem of considerable concern since soil erosion is already a serious problem in this area, and all over New Mexico."

**Response:** Please refer to UT-0239.

### NM-2572.

**Comment No. 3:** "Another large concern is the contamination of surface and ground water by pesticides used to kill plants. Private wells are common in this area and could easily be contaminated as they are typically not very deep."

**Response:** See responses to UT-0239, and UT-0104.



## CONSULTATION AND COORDINATION

### AZ-2574, Linda Wells.

**Comment No. 1:** "The only wildlife that seem to benefit from your plan are a few species that incidentally improve with livestock grazing. Wildlife improvement is certainly the exception and not the rule when an area is grazed by livestock. There is only so much forage and no matter what management technique is used cattle displace wildlife."

**Response:** There are also many instances where wildlife have received significant benefits from vegetation treatments, and some of these have been fully funded by the range management program. It is not easy to make clear statements as to the actual impacts of treatments to wildlife or of the impacts to wildlife of livestock grazing. In some situations grazing by livestock has been proven to be beneficial to wintering wildlife, and the lack of grazing has been demonstrated to be adverse to wildlife (Frisina and Morin 1989). Heavy livestock grazing has often been beneficial to mule deer habitat, while moderate grazing may be detrimental to mule deer and beneficial to elk. These wildlife and livestock relationships are very complex and of course vary from species to species. Current regulations allow livestock grazing on public lands and the most beneficial course of action is to manage for the best wildlife populations possible in conjunction with this grazing use. The impacts to wildlife sections have been amended to include discussions of more of the potential adverse impacts of improperly applied vegetation treatments to wildlife. Also, mitigation has been added to reinforce the protection of crucial wildlife values.

### AZ-2574.

**Comment No. 2:** "In the draft there are 33 pages analyzing the impact of chemical methods on humans and less than a page on the effects on wildlife. The main consideration for the timing of aerial applications of herbicides is the potential risk to humans consuming wildlife that have eaten herbicide contaminated forage."

**Response:** Appendix E, sections 6, 7, and 8 summarize impacts of herbicides on wildlife. Additional discussion of impacts of herbicides to wildlife and mitigation has been included in the Final EIS.

### AZ-2574.

**Comment No. 3:** "BLM lands contain 45 of the federally listed threatened and endangered species and many others that are being considered for listing. The number of species that are listed and the methods of vegetation management that you propose would simply add to already stressed ecosystems."

**Response:** Various laws and regulations allow for management of livestock to mitigate or eliminate adverse impacts of grazing on T. and E., or special status species. In order for this to take place, the direct impact must be demonstrated and the livestock managed or numbers reduced to the level where no significant adverse impacts are further occurring to the wildlife species.